WILDLIFE AREAS OF SPECIAL INTEREST TO THE DEPARTMENT OF RENEWABLE RESOURCES

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1987

Northwest
Territories Renewable Resources

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FOREWORD

I am pleased to issue, in this centenary year of Canada's first wildlife conservation area, the following report entitled "Wildlife Areas of Special Interest to the Department of Renewable Resources".

In 1984, in preparation for Northern Land-Use Planning, the Department of Renewable Resources (Habitat Management Section) began a comprehensive review of wildlife information pertaining to the Northwest Territories. The foremost objective of this effort was to identify the Department's primary interests in northern lands for wildlife conservation purposes. The results of this review are presented in the following report.

The long-term survival of wildlife populations is dependent upon the maintenance of their natural habitats. In the Northwest Territories, we are fortunate in having vast expanses of pristine wilderness which contain abundant wildlife. But the future is forever uncertain. The extent to which natural habitats can be altered by competing land uses is in evidence throughout southern Canada and in many other countries. I sincerely hope, for the benefit of all Canadians, that the Northwest Territories retains its distinctive qualities of people and wildlife living in harmony.

I trust that our contributions to Northern Land-Use Planning and to the Northwest Territories Conservation Strategy will reduce some of the uncertainty and help to ensure a prosperous future for our wildlife resources.

I welcome your comments and suggestions regarding this report. Please forward your comments to:

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Wildlife Management Division
Department of Renewable Resources
Government of the Northwest Territories
P.O. Box 1320
Yellowknife, N.W.T.
XIA 2L9

The Honourable Red Pedersen
Minister
Renewable Resources

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Canada has some of the world's most valuable wildlife resources. It is in the interests of all Canadians that these be managed to yield their full social and economic benefits. Despite the severity of habitat modification and loss, there are many ways to rebuild and strengthen the land base for wildlife habitat, and ultimately protect and nurture the well-being of Canada's wildlife.

Without habitat, there is no wildlife. It's that simple.

Wildlife Habitat Canada
October 1986

INTRODUCTION

The Department of Renewable Resources, Government of the Northwest Territories, has legislative authority for the "preservation of game" in the Northwest Territories (NWT) pursuant to Section 13(q) of the Northwest Territories Act (R.S.C. 1970). The Wildlife Act (S.N.W.T. 1978) and Regulations set out the provisions respecting the management of wildlife in the NWT. Under the latter Act, the Commissioner of the Northwest Territories may divide the NWT into Wildlife Management Units and may designate other areas within such units for wildlife management purposes.

The "Wildlife Conservation Area" designation is proposed by the Department of Renewable Resources for specific geographic areas which comprise important wildlife habitats. As part of its mandate to manage wildlife, the Department has a responsibility for ensuring that the land's capacity to support wildlife is not impaired by land-use practices. Maintenance of wildlife habitat is a fundamental goal of wildlife management. Accordingly, the primary objective of establishing Wildlife Conservation Areas is to protect important wildlife habitats from other land-use activities which may reduce their value to wildlife. Secondary benefits of establishing Wildlife Conservation Areas include the provision of sites for ecological research, environmental monitoring and education, and other related purposes requiring a minimum of environmental disturbance.

Designation of Wildlife Conservation Areas will also fulfill part of Canada's international obligations to protect those wildlife resources which it shares with other nations. For example, the Agreement on the Conservation of Polar Bears (1973), which was signed by the Governments of Canada, Denmark, Norway, the Union of Soviet Socialist Republics and the United States of America, states that, "Each Contracting Party shall take appropriate action to protect the ecosystems of which polar bears are a part, with special attention to habitat components such as denning and feeding sites and migration patterns..."

Departmental policies and programs respecting Wildlife Conservation Areas are in the early stages of development. Initial work has focused on three main tasks: the selection and description of candidate areas; the development of a co-operative approach to planning Wildlife Conservation Areas in the NWT with the Canadian Wildlife Service; and, the development of a public consultation process for proposed Wildlife Conservation Areas. Other aspects of the Wildlife Conservation Areas Program, including the identification of administrative and legislative options for managing Wildlife Conservation Areas, are being addressed as part of the Northwest Territories Conservation Strategy (J. Bastedo pers. comm.).

The following report presents the results of the first task, the selection and description of candidate areas. It summarizes the Department's primary interests in NWT lands for wildlife conservation purposes, and is intended to serve three main functions:

Firstly, the report is intended for use by land-use planners. Basic resource information, such as, which areas are important to wildlife, where they are located, when they are occupied, etc., will enable planners to identify potential wildlife/land-use conflicts and to make recommendations concerning the allocation of lands for multiple land-use purposes.

Secondly, the report may be viewed as a first step in the public consultation process because it conveys to other governments and conservation agencies, and to the general public, the Department's primary interests in NWT lands for the purposes of wildlife conservation. Lands which comprise important wildlife habitats and which already receive an adequate level of protection, such as the Thelon Wildlife Sanctuary, Polar Bear Pass National Wildlife Area and national park reserves, are not described in this report.

Thirdly, the report is intended for use by Departmental planners to assist in setting priorities for allocation of financial resources and management effort. For example, a proposed Wildlife Conservation Area that supports several wildlife species of socio-economic importance is likely to receive earlier and greater attention than an area supporting fewer species, assuming all other factors are equal. Similarly, a stronger case for protective status may be made if an area is important to both migratory birds and big game, and is jointly supported by the Canadian Wildlife Service and the Department of Renewable Resources as per the Memorandum of Understanding concluded in August

1985 (see Appendix "A").

The Department of Renewable Resources is continuing its investigations of wildlife populations and their habitats throughout the NWT. Accordingly, as new information is collected and synthesized, additional "areas of special interest" may be identified from time to time and added to the list of proposed Wildlife Conservation Areas. The information presented in this report is based on the results of wildlife studies up to December 1986.

METHODS

Conceptual Approach to Identification of Candidate Areas

One of the greatest challenges to proponents of conservation lands concerns the identification process itself. Differences in professional opinion as to what constitutes "important" habitat for wildlife, and lack of objective standards for qualities of "ecosystem representativeness" and "environmental sensitivity" make it difficult to derive a simple, universal formula that can be used as a basis for selecting candidate areas. Accordingly, proponents usually have to rely on subjective evaluations and value judgments in lieu of conclusions based on the formulation and testing of hypotheses. This is often an uncomfortable role for professionals whose academic training extolled the virtues of the Scientific Method.

A second fundamental obstacle relates to the latitudinal diversity of the NWT and the pronounced, regional differences in wildlife distributions and population levels. These factors frustrate any attempt to define a single "level of importance" for general application throughout the NWT. Furthermore, wildlife populations are neither static in time nor in space. Consequently, the basis for evaluation of candidate areas - animal abundance in a specific area - changes with time.

In southern jurisdictions within Canada, the concept of "critical wildlife habitat" has frequently been used as a basis for identifying lands of major importance to wildlife (Stelfox 1980). The term generally refers to discrete geographic areas containing specific habitat elements - landform, topography, vegetation, etc. - with consideration given to proportions, interspersion and other ecological relationships. The "critical wildlife habitat" designation has merit when applied to the agricultural landscapes of the south because most habitats for major game species appear as "islands" surrounded by cultivated lands. They are "critical" in the sense that, if they were removed, local wildlife populations would undoubtedly suffer because alternative areas of suitable habitat are generally lacking.

In the NWT, circumstances are notably different because land-use activities and the resulting modifications to wildlife habitats tend to be site-specific rather than extensive. Most lands remain in an unaltered state. Consequently, the "critical wildlife habitat" approach used in southern Canada is currently of limited value in the NWT. Furthermore, on a territorial scale, we lack sufficient information to attempt to evaluate areas on the basis of geographic differences in habitat quality or quantity. For these reasons, a more generalized approach to selection of candidate areas is necessary at this time.

At the simplest level of differentiation, an area may be categorized as either occupied or unoccupied range on the basis of presence or absence of particular wildlife species. However, as a means of establishing priorities for planning purposes, delineation of a species' range in its entirety provides little meaningful information.

Thus, it is necessary to strike a balance between attempting to identify specific habitat types which are deemed to be "critical", and delineating broad geographic areas which encompass a species' entire range.

Guidelines for Identifying Candidate Areas

1. Species of Primary Interest

The Department of Renewable Resources has legislative responsibility for many species of wildlife, as specified in Schedule "A" of the Wildlife Act (see Appendix "B"). All species are ecologically important, but some are of greater interest to the Department because of their socio-economic importance to residents of the NWT. As a general rule, management priorities are set according to socio-economic considerations. The selection of areas nominated for Wildlife Conservation Area status reflects those priorities. Species of primary interest to wildlife managers and users in the NWT include caribou, polar and grizzly bears, muskox, moose, furbearers, wood bison, birds of prey, Dall's sheep and waterfowl.

The featured species approach to identification of areas is sometimes criticized because of its apparent disregard for other "less valuable" species and for the ecosystem in general. Although areas are selected on the basis of the presence of high priority species, this should not be interpreted as a general lack of interest in other wildlife. The Department is committed to the well-being of all wildlife in the NWT, and will continue to address their habitat requirements by participating in the Environmental Assessment Review Process and in the routine review of land-use permit applications. As an active member of the Land Use Advisory Committee, the Department attempts to ensure that wildlife and wildlife habitats are protected by recommending that mitigative and restorative measures are practised by land-use operators.

A second reason for focusing on featured species is that our information base for socio-economically important species is more extensive than for other wildlife. Non-game species, for example, receive relatively little attention, not because they are unimportant, but because they must "compete" with higher priority species for limited financial and human resources. As a result, attempts to nominate Wildlife Conservation Areas for lower priority species are seriously hampered by a lack of biological data.

2. Distribution and Abundance of Primary Species

Wildlife is rarely distributed uniformly throughout the environment. Rather, animals tend to occur in greater numbers in some areas than in others as a result of many environmental factors, including spatial differences in habitat quality, quantity and availability. Ideally, a complete understanding of the distribution of different habitat types, and of their relative importance to various wildlife species, would make the task of selecting Wildlife Conservation Areas an easy one. However, in the NWT, detailed habitat inventories are incomplete or lacking altogether, and our knowledge of habitat relationships is at best fragmentary. Alternatively, wildlife biologists generally have to rely on information describing seasonal distributions and abundances of animals as an indirect "measure" of the relative importance of areas. Inferentially, an area which consistently supports a large part of a population probably contains those habitat features which contribute in some way to the animals' well-being.

Selection of candidate areas on the basis of animal abundance is not without precedence. For example, this approach has been used by the Canadian Wildlife Service for identifying Key Migratory Bird Terrestrial Habitat Sites in the NWT. The severity of an environmental disruption is often measured in terms of the resulting numerical decline in a population; consequently, the importance of a particular area is partly a function of the number of animals it supports (McCormick et al. 1984).

The second guideline serves a useful, discriminative function because it divides the species of primary interest into two categories. The first category is characterized by species which gather in a relatively discrete area for all or part of the year. This category includes gregarious species which form herds or colonies (e.g., barren-ground caribou, wood bison, Dall's sheep and some geese), and species with clustered distributions at certain times of the year owing to the patchy nature of seasonal habitats (e.g., muskox, polar bear, moose and some birds of prey).

The second category comprises solitary species which are widely dispersed throughout suitable habitat; they tend not to form groups larger than the family unit. Most of the fur-bearing animals, including beaver, marten, lynx, fox, wolf, ermine and wolverine, fall into this category.

Management practices that focus on protection of discrete areas of habitat by formal designation of conservation lands are most efficient for dealing with species in the first category. It would be impractical to attempt to secure and manage habitat for widely dispersed populations through formal designation of lands because such vast expanses of land would be involved. Furthermore, these populations are less vulnerable to site-specific environmental disturbances because of their dispersed distributions. For these reasons, this report focuses on species in the former category.

3. Frequency and Duration of Use

An area that is used consistently over a period of years is generally regarded as playing an important, functional role in the annual cycle of a population. Accordingly, frequency or duration of use may provide an indirect measure of the relative importance of areas, but such information should be used with caution. For example, when sampling periods are brief or widely separated in time, data respecting animal distributions may merely reflect survey effort and may not necessarily indicate the actual extent of important seasonal habitats. Regular surveys with consideration given to habitat stratification are preferable to one-time efforts with the sole purpose of estimating population size.

A second important consideration is that the extent of occupied range is intimately tied to population levels, and whether a population is increasing, decreasing or stable. Supporting information respecting population trends is helpful when attempting to interpret range-use patterns. Several species of primary interest, including muskox, wood bison and barren-ground caribou, have experienced notable population increases in the past few years.

4. Regional Importance

A regional approach to identification of areas permits relatively simple comparisons of population levels and range-use patterns within relatively uniform, environmental settings. A regional approach also represents a workable compromise between attempting to identify areas of local importance and those of territorial or national importance. If "standards of importance" were applied on a territorial scale, sites in the Queen Elizabeth Islands, for example, would consistently be evaluated as "less important" than mainland sites because of latitudinal differences in the land's capabilities to support wildlife. From a biological perspective, selection of candidate areas on this basis would be hard to justify.

The Department of Renewable Resources recognizes the importance of local wildlife populations to resource users, but identification of areas on the basis of local importance is beyond the scope of this study. Other ongoing Departmental studies, including the compilation and analysis of harvest statistics and the resource inventory surveys associated with Northern Land-Use Planning, will document important areas of wildlife use. For the purposes of this report, it was necessary to differentiate places of biological significance from places of cultural significance.

Since identification of areas is based on their biological importance, regions were delineated according to recognizable ecological gradients (Figure 1, Table 1) as opposed to administrative boundaries, which have little relevance to wildlife distributions. The six regions serve no other purpose than to assist in the selection of candidate Wildlife Conservation Areas. Selection of an area signifies that it is among the most important sites for a given species within a particular region. It does not imply absolute importance of areas nor a degree of "criticalness" to a species or population.

Listing of Candidate Areas

Two categories are used for the listing of wildlife areas of special interest: Schedule 1 Areas and Schedule 2 Areas. Assignment of an area to either category reflects the completeness of information and our level of preparedness for recommending Wildlife Conservation Area status.

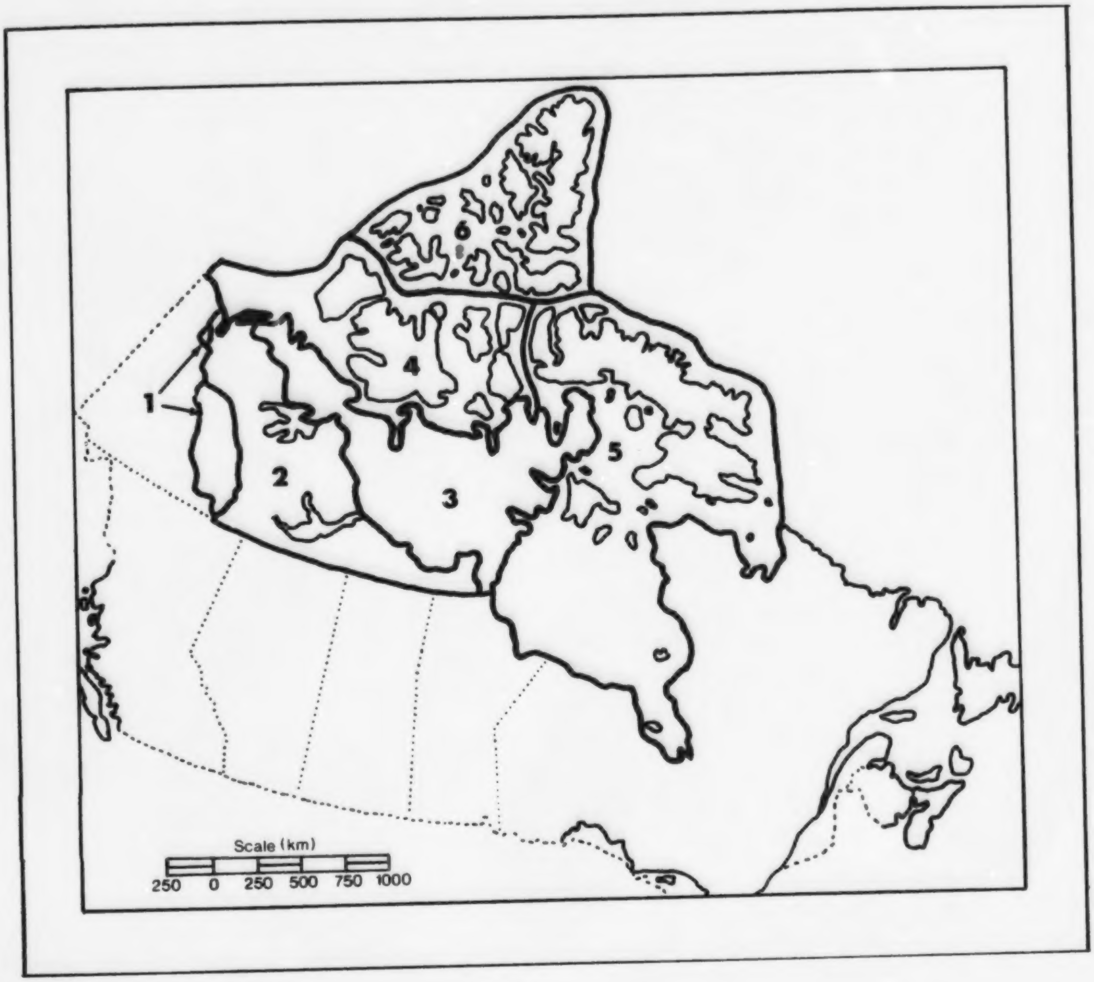
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Figure 1. REGIONAL DIVISION OF THE NORTHWEST TERRITORIES ACCORDING TO MAJOR ECOLOGICAL GRADIENTS

1. Mackenzie and Richardson Mountains
2. Boreal Forest / Subarctic Woodland
3. Mainland Tundra
4. Victoria Lowlands
5. Baffin Island
6. Queen Elizabeth Islands

TABLE 1. GEOGRAPHIC AND PHYSIOGRAPHIC CHARACTERISTICS OF THE SIX ECOLOGICAL REGIONS OF THE NORTHWEST TERRITORIES

REGION	GEOGRAPHIC COVERAGE	MAIN PHYSIOGRAPHIC FEATURES	CHARACTERISTIC WILDLIFE SPECIES
1. Mackenzie and Richardson Mountains	Mackenzie and Richardson mountain ranges	Rugged mountains and plateaus with elevations exceeding 2000 m asl. Dominant vegetation is alpine forest with tundra at high elevations; mixed and coniferous forests in valleys and on lower slopes.	Dall's sheep, grizzly bear, woodland caribou, moose, marten, lynx, coyote, gyrfalcon, peregrine falcon.
2. Boreal Forest/ Subarctic Woodland	Mainland areas south of the tree line in the districts of Mackenzie and Keewatin, excluding the Mackenzie Mountains.	Western half dominated by level and gently rolling topography associated with the Great Slave, Great Bear and Anderson plains; closed, mixed and coniferous forests with extensive areas of muskeg. Eastern half dominated by Precambrian Shield of generally low relief with numerous lakes and ponds; open, subarctic woodland of dwarfed trees interspersed with areas of muskeg and barren rock.	Moose, woodland caribou, black bear, beaver, wood bison, lynx, marten, red fox, peregrine falcon.
3. Mainland Tundra	Mainland areas north of the tree line in the Districts of Mackenzie and Keewatin; also includes Melville Peninsula in the District of Franklin.	Diverse region of Precambrian Shield with broad, sloping uplands, plateaus and lowlands; numerous lakes and ponds; eskers and other glacial landforms provide local topographical relief. Vegetation generally low arctic tundra; forest-tundra transition occurs along tree line and major drainages near the southern boundary.	Barren-ground caribou, muskox, grizzly bear, wolverine, red fox.

Table 1. (continued)

REGION	GEOGRAPHIC COVERAGE	MAIN PHYSIOGRAPHIC FEATURES	CHARACTERISTIC WILDLIFE SPECIES
4. Victoria Lowlands	Beaufort Sea area; Victoria, Banks, Prince of Wales, King William and Somerset islands; Boothia Peninsula.	Generally low-lying plains and plateaus of sedimentary bedrock (except for Precambrian Shield of Boothia Peninsula); topographic relief provided by Shaler Mountains and, locally, by glacial landforms (drumlinoid ridges and moraines). Low arctic, tundra vegetation dominated by low shrubs and graminoid meadows.	Muskox, polar bear, Peary caribou, arctic fox, ringed seal.
5. Baffin Island	Baffin Island; Foxe Basin, Hudson and James bays and the islands therein.	Eastern and central Baffin Island, mountainous with elevations exceeding 1500 m asl; permanent ice caps at higher elevations; coastline deeply indented by fiords and bays; vast areas of barren rock. Southwestern Baffin Island dominated by Foxe Plain, a shallow basin-like area with numerous lakes and emerged beaches; well developed tundra vegetation on lowlands.	Polar bear, barren-ground caribou, gyrfalcon, harp seal, ringed seal, walrus.
6. Queen Elizabeth Islands	The High Arctic islands lying north of the waters comprising the Northwest Passage (Lancaster Sound, Barrow Strait, Viscount Melville Sound and M'Clure Strait).	Diverse region comprising coastal lowlands, broad plains, elevated plateaus and mountainous terrain with summits reaching 2500 m asl; permanent ice fields dominate higher elevations; vast areas of polar desert; tundra vegetation generally restricted to coastal lowlands, seepage areas and other favourable sites.	Polar bear, muskox, Peary caribou, arctic fox.

We know much more about some wildlife areas and populations than others. A few populations have been surveyed repeatedly over the last few decades, and their seasonal distributions and abundances are well documented. Areas with relatively complete and recent documentation are assigned to Schedule 1.

Many other populations have been surveyed less frequently and their characteristics are poorly known. Although such incomplete and often outdated information is less than ideal, it may be used to generate a list of areas requiring closer examination and, therefore, serves a useful planning function. Areas identified on the basis of historical and/or incomplete information are assigned to Schedule 2. Additional surveys designed to document current levels of use by wildlife are needed before we can make reasonable recommendations proposing Schedule 2 lands as Wildlife Conservation Areas.

Many other populations are so poorly documented that biologists are unable to identify, with any degree of certainty, discrete areas of biological importance. In the past, woodland caribou, Peary caribou and grizzly bear have received cursory attention, while Dall's sheep and moose populations have been surveyed infrequently and only in a few areas. Important wildlife areas for these and other species may be added to the list of proposed Wildlife Conservation Areas at a later time as our understanding of their populations improves.

Format for Candidate Area Descriptions

Presentation of information in support of each nominated area consists of a map and accompanying written descriptions, as noted below:

Name: Each area is named after a prominent geographic or topographic feature, or in some cases after a well known herd or population of animals (e.g., Kaminuriak Caribou Calving Ground).

Reference Number: A number is assigned to each area to correspond to its numbered location on the summary maps (Figure 2 and Appendix "D").

Schedule: The number "1" or "2" corresponds to the categories discussed on pages 12 - 16.

Location: The approximate centre of each area is expressed in degrees latitude and longitude, and its distance and orientation from the nearest human settlement are noted.

Size: The approximate area (including water bodies, unless stated otherwise) is given in square kilometres.

Boundary: A brief paragraph describes the kinds of information used to delineate the boundary (e.g., whether the boundary follows habitat features, or whether it depicts a more general area where animals congregate). For most areas, the boundaries are considered to be preliminary in that they refer to general areas of interest. They are not intended to represent functional boundaries for management purposes and are subject to change as new information is collected and synthesized. They may require considerable refinement before the Department is prepared to advance specific proposals calling for the formal designation of areas.

Very general boundaries were drawn intentionally around nesting areas of gyrfalcons and peregrine falcons. These species are highly prized on international markets and individual birds command high prices. Wildlife managers and enforcement officials in Canada are cognizant of illegal trade in Canadian falcons. For this reason, the Department of Renewable Resources is taking a cautious and conservative approach to the release of information respecting falcon nest-site locations. However, individuals with legitimate interests in falcons may obtain further information by contacting the Wildlife Management Division, Department of Renewable Resources, in Yellowknife.

Natural Setting: This section provides a brief description of the natural features of the area, including bedrock and glacial geology, landforms, topography, drainage patterns and vegetation.

Importance to Wildlife: This section gives pertinent information respecting the area's importance to wildlife species of primary interest. Data are presented concerning the functional significance of areas (e.g., denning, calving, feeding, etc.), population estimates, seasonal use of areas, key habitat features and other relevant information.

Other Conservation Interests: Reference is made to other agencies and interest groups that have formally expressed interest in the area for conservation purposes.

Protective Status: This section indicates the legal status of the lands (as of December 1986) and the applicable statutes pertaining to the regulation of land use.

CATALOGUE OF PROPOSED WILDLIFE CONSERVATION AREAS

Thirty-six proposed Wildlife Conservation Areas are mapped and described on the following pages: nine areas for barren-ground and Peary caribou, eight areas for gyrfalcon and peregrine falcon, one area for Dall's sheep, seven areas for muskox, nine areas for polar bear, one area for moose, and one area for wood bison (Table 2). Within each taxonomic group, Schedule 1 Areas are listed first in alphabetical order by area name, followed by Schedule 2 Areas in alphabetical order. A summary map (Figure 2) shows the general locations of all proposed areas, and a larger fold-out map in a pocket on the inside back cover depicts their boundaries (Appendix "D").

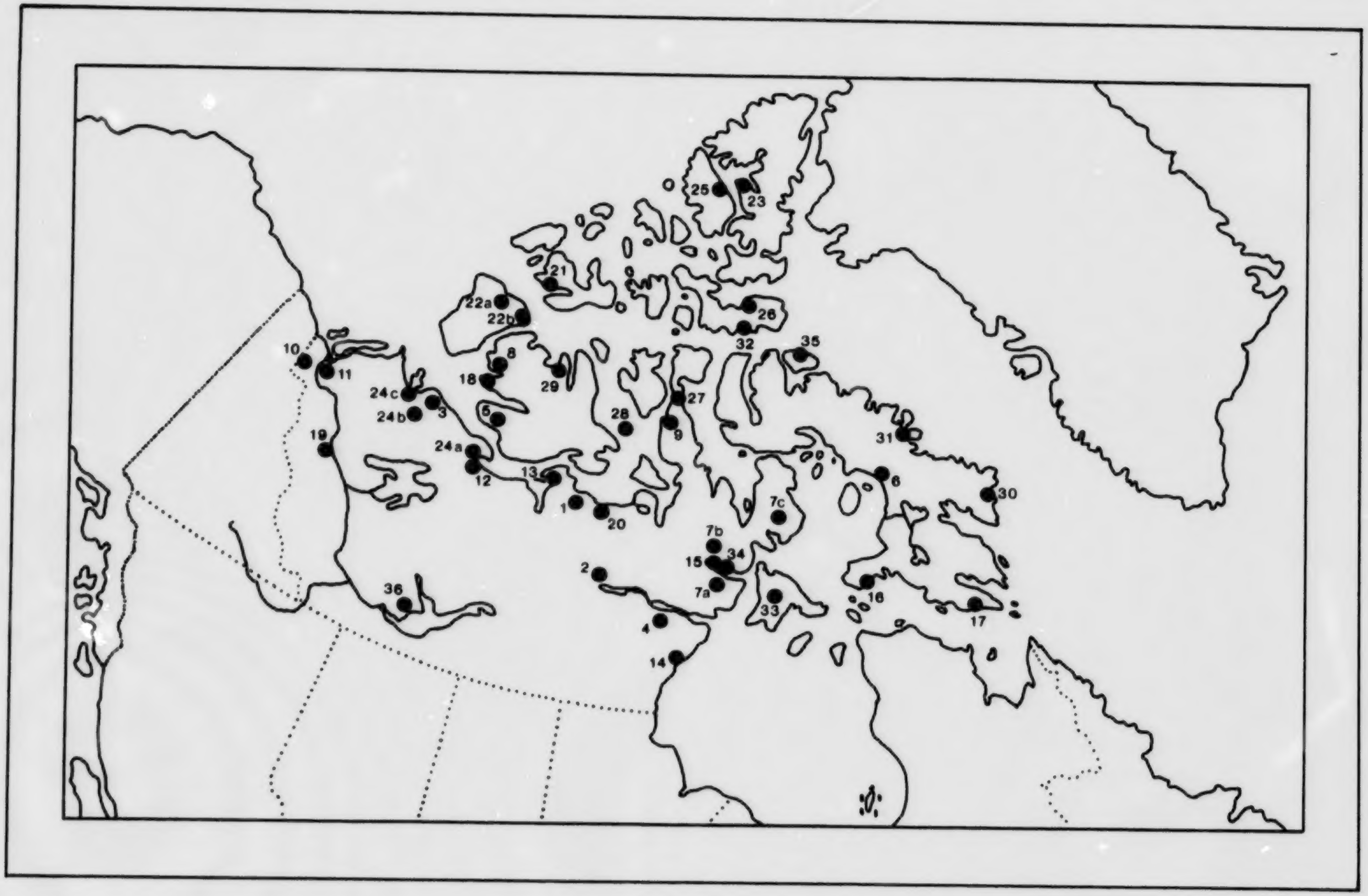
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Figure 2. GENERAL LOCATIONS OF WILDLIFE AREAS OF SPECIAL INTEREST TO THE DEPARTMENT OF RENEWABLE RESOURCES

Table 2. WILDLIFE AREAS OF SPECIAL INTEREST TO THE DEPARTMENT OF RENEWABLE RESOURCES

Species	Ref. #	Area Name (Schedule)	Area KM2
Barren-ground and Peary Caribou	1	Bathurst Caribou Calving Ground (1)	9,500
	2	Beverly Caribou Calving Ground (1)	14,700
	3	Bluenose Caribou Calving Ground (1)	12,700
	4	Kaminuriak Caribou Calving Ground (1)	33,400
	5	Colvile Mountains (2)	2,800
	6	Dewar Lakes (2)	23,700
	7	Northeastern Keewatin Caribou Calving Grounds (2)	28,000
	8	Prince Albert Peninsula (2)	6,900
	9	Wrottesley Inlet (2)	4,100
Dall's Sheep	10	Mount Goodenough (1)	1,800
Gyrfalcon and Peregrine Falcon	11	Campbell Lake (1)	1,025
	12	Coppermine River (1)	10,500
	13	Melville Sound (1)	15,000
	14	Rankin Inlet (1)	1,150
	15	Ford Lake (2)	17,700
	16	Foxe Peninsula (2)	15,600
	17	Meta Incognita Peninsula (2)	28,800
	18	Minto Inlet (2)	7,600
Moose	19	Carcajou River (2)	3,100
Muskox	20	Back Lowland (1)	25,500
	21	Bailey Point (1)	740
	22	Thomsen & Parker Rivers (1)	14,800
	23	Fosheim Peninsula (2)	3,600
	24	Horton Plain (2)	14,600
	25	Mokka Fiord (2)	3,100
	26	Truelove Lowlands (2)	425
Polar Bear	27	Bellot Strait (1)	10,300
	28	Gateshead Island (1)	2,000
	29	Hadley Bay (1)	28,300
	30	Hoare Bay (1)	11,600
	31	Home Bay (1)	23,000
	32	Maxwell Bay (1)	5,300
	33	Southampton Island (1)	14,000
	34	Wager Bay (1)	6,300
	35	Bylot Island (2)	8,000
Wood Bison	36	Falaise Lake (1)	1,900

BARREN-GROUND AND PEARY CARIBOU

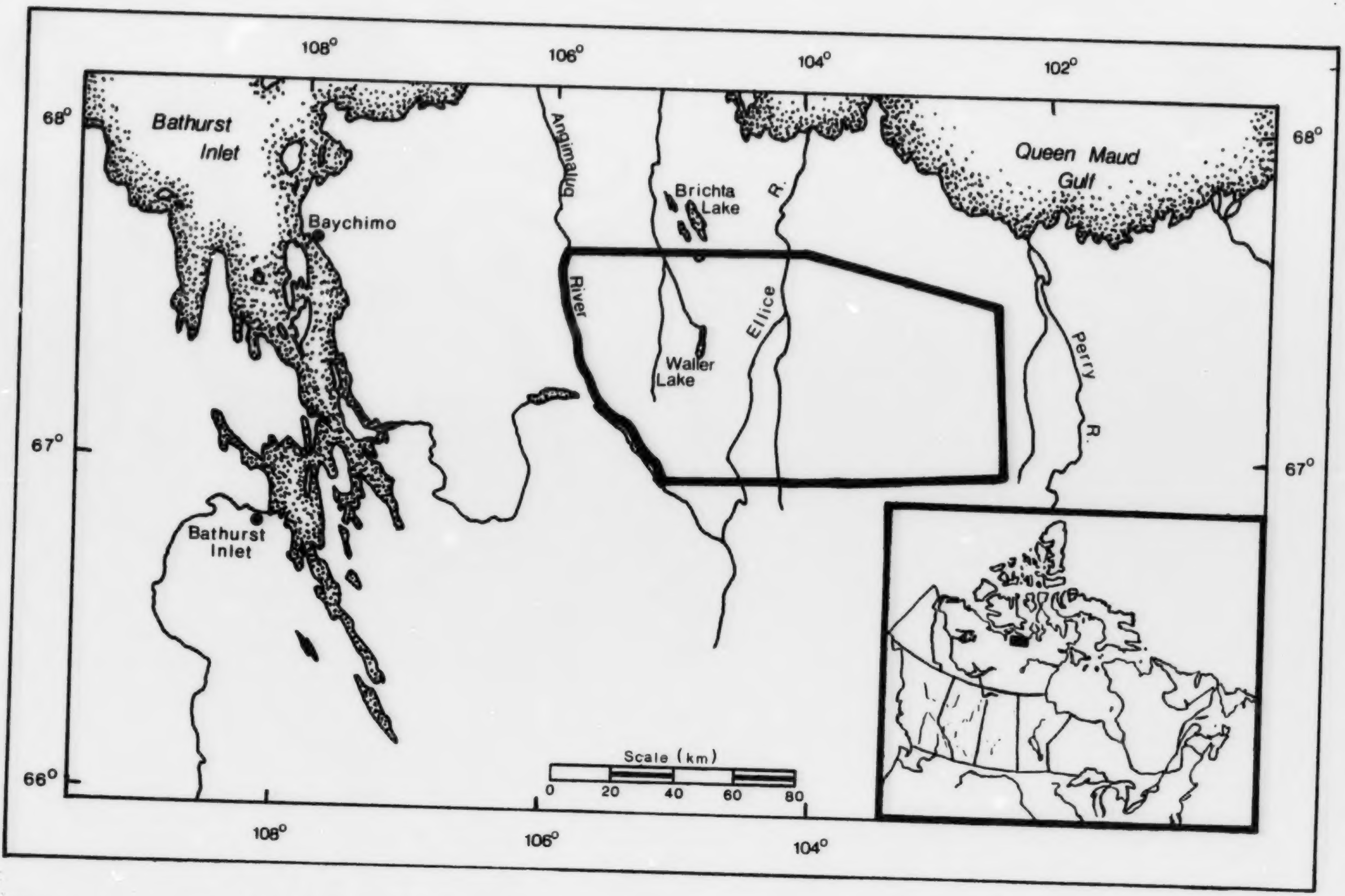

108°
106°
104°
102°
68°
68°
67°
67°
66°
Bathurst Inlet
Baychimo
Bathurst Inlet
Angimaluq River
Brichta Lake
Waller Lake
Ellice R.
Perry R.
Queen Maud Gulf
Scale (km)
0
20
40
60
80
108°
106°
104°

Figure 3. BATHURST CARIBOU CALVING GROUND

Name: BATHURST CARIBOU CALVING GROUND

Reference Number: 1

Schedule: 1

Location: The approximate geographic centre of the Bathurst Caribou Calving Ground is located at 67°15'N, 104°10'W, 240 km east of the settlement of Baychimo in the District of Mackenzie.

Size: 9,500 km2

Boundary: The boundary is based on known, high density areas for calving caribou. Between 1966 and 1984, the calving ground has been surveyed in eight years. During the last four surveys (1977, 1980, 1982 and 1984), two concentration areas were documented. The first area, used in all four years by large numbers of caribou, extended from the Angimajuq River in the west to the Ellice River in the east, and from south of Brichta Lake in the north to Waller Lake in the south. The second concentration area, used in 1977 and 1980, was located east of the Ellice River as far as 102°30'W, and from 67°05'N in the south to 67°35'N in the north. The Bathurst Caribou Calving Ground boundary encompasses both of these concentration areas.

Natural Setting: The Bathurst Caribou Calving Ground lies within the Back Lowland physiographic region (Bostock 1970), and is underlain by gneissic, granitic rocks enclosing narrow volcanic belts (Fleck and Gunn 1982, Fraser 1964). The dominant glacial landforms include drumlin fields, eskers, outwash plains, end moraines and ground moraines. Marine silts and sands occupy low-lying depressions among the glacial landforms and bedrock outcrops. Elevations are highest in the southwest corner of the area (215 m above sea level [asl]), and lowest in the northeast (60 m asl). Tundra ponds and small lakes are scattered throughout the area, with drainage to the north into Queen Maud Gulf. Three plant associations are recognized in this area of the mainland tundra: marsh tundra, lichen-heath and dwarf shrub-heath (Nettleship and Smith 1975).

Importance to Wildlife: The area is of special interest to the Department of Renewable Resources because it represents the core calving ground of the Bathurst Caribou Herd. A calving ground survey in 1984 resulted in a population estimate of 220,000 - 290,000 caribou (by visual survey techniques) and 320,000 - 450,000 caribou (by photographic survey techniques) (D. Heard pers. comm.). Calving generally occurs during the first two weeks of June. By mid-June cows with calves are forming nursery bands, but the timing of their departure from the calving ground and the locations of post-calving areas are poorly documented (Fleck and Gunn 1982). Post-calving groups of caribou have been observed on the lowlands around Bathurst Inlet by early July.

The calving ground and surrounding area is an important nesting and moulting area for waterfowl, particularly Ross' goose (45,000 pairs) and lesser snow goose (53,000 pairs), but also for Canada goose, brant, white-fronted goose and tundra swan (McCormick et al. 1984).

The area south of Queen Maud Gulf is also an important mainland area for muskoxen (see Back Lowland, page 111). A systematic aerial survey in 1982 yielded a population estimate of about 8,500 muskoxen in the Queen Maud Gulf area (Gunn et al. 1984).

Other Conservation Interests: The delineated area falls almost entirely within the boundaries of the Queen Maud Gulf Migratory Bird Sanctuary (McCormick et al. 1984). The sanctuary has also been designated as a Wetland of International Importance (Canada Department of the Environment 1982e, UNESCO 1971), and was proposed as an International Biological Programme (IBP) site (Nettleship and Smith 1975).

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations, and the Migratory Bird Sanctuary Regulations pursuant to the Migratory Birds Convention Act.

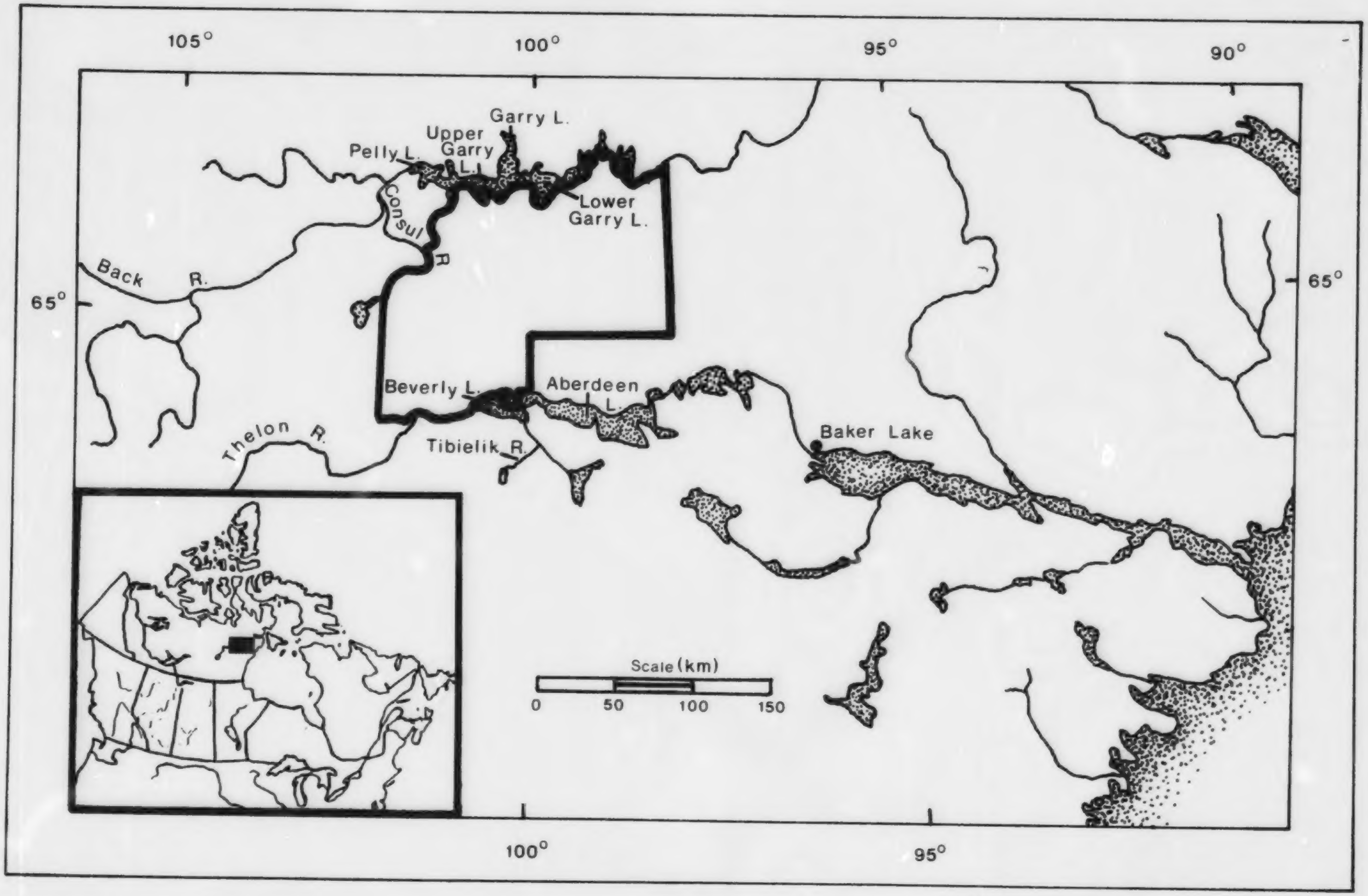

105°
100°
95°
90°
65°
65°
Garry L.
Upper Garry L.
Pelly L.
Consul R
Lower Garry L.
Back R.
Beverly L.
Aberdeen L.
Thelon R.
Tibielik R.
Baker Lake
Scale (km)
0
50
100
150
100°
95°

Figure 4. BEVERLY CARIBOU CALVING GROUND

Name: BEVERLY CARIBOU CALVING GROUND

Reference Number: 2

Schedule: 1

Location: The approximate geographic centre of the Beverly Caribou Calving Ground is located at 65°30'N, 99°30'W, 225 km northwest of the settlement of Baker Lake in the District of Keewatin.

Size: 14,700 km2

Boundary: The boundary is based on known concentration areas for calving caribou. During the period from 1957 to 1984, the calving ground of the Beverly Caribou Herd has been surveyed in 14 different years, usually in early June. Shifts in the location of concentration areas have occurred from year to year and some caribou have calved outside the boundary, but the highest densities of calving caribou have consistently been recorded within the delineated area. Since the mid-1970s calving has generally occurred within the northern part of the delineated area.

Natural Setting: The Beverly Caribou Calving Ground lies within the Back Lowland and Thelon Plain physiographic regions (Bostock 1970). Glacial landforms include drumlins and drumlin fields, eskers, outwash plains, ribbed moraines and till plains (Fleck and Gunn 1982). Flat-lying sandstone underlies most of the area, with scattered outcrops projecting above the glacial till (Wright 1967). Vegetation is variable according to substrate, moisture regime and snow depth, and includes many species of lichen, moss, sedge, forb and low shrub. Fleck and Gunn (1982) identified 11 plant associations within or near the calving grounds; a species list for each association is presented in their report. The area contains many small and a few large lakes, most of which flow northwards into the Back River.

Importance to Wildlife: The area is of special interest to the Department of Renewable Resources because it represents the core calving ground of the Beverly Caribou Herd. The most recent population estimates for this herd, obtained in 1984, are 120,000 - 170,000 caribou (based on visual survey techniques) and 250,000 - 420,000 caribou (based on photographic survey techniques) (D. Heard pers. comm.). Comparisons with earlier population estimates indicate that herd size is presently stable or increasing. Minor variations in the timing of calving occur from year to year, but most calving generally takes place between 1 and 15 June. During the period from 1978 to 1982, the earliest recorded date for the commencement of calving in the Beverly and Kaminuriak herds was 29 May, and the latest date for the peak of calving was 13 June (Clement 1983, Gunn and Decker 1982, Mychasiw 1984). Dispersal of cows and calves from the calving ground generally occurs in early July to areas west and southwest of the calving ground (Mychasiw 1984).

The Back River, including Pelly, Upper Garry, Garry and Lower Garry lakes, forms the northern boundary of the calving ground.

This area is a Key Migratory Bird Terrestrial Habitat Site, primarily for moulting flocks of Canada geese, which use the area from mid-June until mid-August (McCormick et al. 1984). The lowlands south of Garry Lakes also provide year-round range for approximately 200 - 300 muskoxen (R. Decker pers. comm.).

Other Conservation Interests: The southern part of this area (Tibielik River) was proposed as an IBP site (Nettleship and Smith 1975). The Canadian Wildlife Service has expressed interest in the area immediately north of the calving ground (Middle Back River) for reasons noted above (McCormick et al. 1984). The southwestern part of the delineated area overlaps with the Thelon Wildlife Sanctuary.

Protective Status: Land-use activities are regulated under the Territorial Lands Act and the Territorial Land Use Regulations. Since 1978, the Department of Indian and Northern Affairs has imposed additional controls on land-use operations in the form of the Caribou Protection Measures. The main thrust of these measures is to prevent potentially harmful contact between caribou and land-use activities during the calving and post-calving seasons (Mychasiw 1984). The Caribou Protection Measures apply to the Beverly and Kaminuriak caribou herds. Lands within the Thelon Wildlife Sanctuary have been withdrawn from disposition pursuant to the Territorial Lands Act.

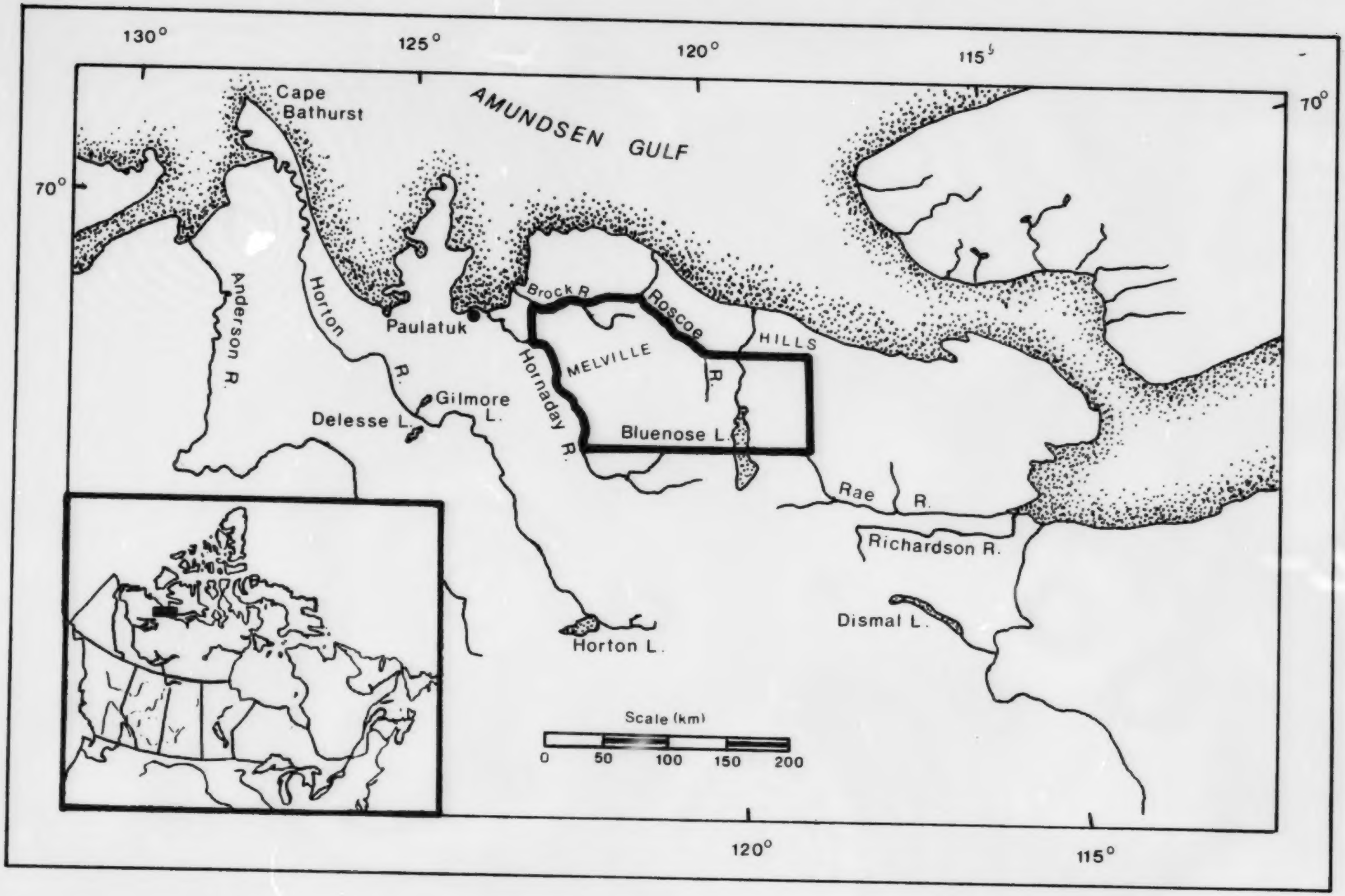

130°
125°
120°
115°
70°
70°
Cape Bathurst
AMUNDSEN GULF
Brock R.
Roscoe R.
HILLS
MELVILLE
Paulatuk
Horton R.
Anderson R.
Hornaday R.
Gilmore L.
Delesse L.
Bluenose L.
Rae R.
Richardson R.
Dismal L.
Horton L.
Scale (km)
0
50
100
150
200
120°
115°

Figure 5. BLUENOSE CARIBOU CALVING GROUND

Name: BLUENOSE CARIBOU CALVING GROUND

Reference Number: 3

Schedule: 1

Location: The approximate geographic centre of the Bluenose Caribou Calving Ground is located at 68°50'N, 121°00'W, 135 km southeast of the settlement of Paulatuk in the District of Mackenzie.

Size: 12,700 km2

Boundary: The boundary is based on known concentration areas for calving caribou. During the last four calving ground surveys (1978, 1979, 1981 and 1983), the delineated area consistently supported the highest densities of calving caribou. Earlier surveys (1974 and 1975) also indicated large concentrations on the peninsula south of Cape Bathurst, 200 km to the northwest. Bluenose caribou favour the high, rugged terrain north and northwest of Bluenose Lake as their traditional calving ground (Latour and Heard 1985).

Natural Setting: The Bluenose Caribou Calving Ground lies within the Horton Plain physiographic region (Bostock 1970). The general topography is a rolling, rocky plain with patches of till veneer and other glacial features, including drumlins, outwash deposits and ridge moraines (Canada Department of Fisheries and the Environment 1977a). Large areas of tundra polygons occur on the outwash deposits south of the Roscoe River. The area is dissected by tributaries of the Hornaday, Brock and Roscoe rivers. The Melville Hills border the northern part of the area, and are characterized by rolling uplands with bedrock outcrops, glacio-fluvial terraces and extensive deposits of hummocky moraine. The vegetation consists primarily of lichen tundra and open shrubland, with sedge tundra in wet, low-lying areas.

Importance to Wildlife: The delineated area comprises the core calving ground of the Bluenose Caribou Herd. In 1983, a calving ground survey yielded a population estimate of 30,000 - 50,000 by visual survey techniques and 50,000 - 80,000 by photographic survey techniques (D. Heard pers. comm.). In July 1986, a post-calving, photographic survey yielded a preliminary population estimate of 80,000 - 100,000 caribou (B. McLean pers. comm.) Calving occurs during the first two weeks of June. The post-calving movements of Bluenose caribou are poorly documented, but dispersal from the calving ground is generally believed to occur in July (Hawley et al. 1979).

The delineated area lies within an important year-round range for muskoxen, which extends south of the arctic coastline to Horton and Dismal lakes, and from the Horton River watershed in the west to the Rae and Richardson rivers in the east (see Horton Plain, page 127). Case and Poole (1985) estimated a population of approximately 3,300 muskoxen in this area in March 1983. Major concentrations occurred along the upper reaches of the Horton River, in the Gilmore and Delesse lakes area, and along the Rae and Richardson rivers.

The deltas of the Brock and Hornaday rivers, northwest of the calving ground, provide nesting habitat for thousands of swans, geese and ducks from late May until mid-August (Canada Department of Fisheries and the Environment 1977a).

Other Conservation Interests: The northwestern corner of the Bluenose Caribou Calving Ground has been identified by Parks Canada as part of a Natural Area of Canadian Significance (Canada Department of the Environment 1984d).

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations.

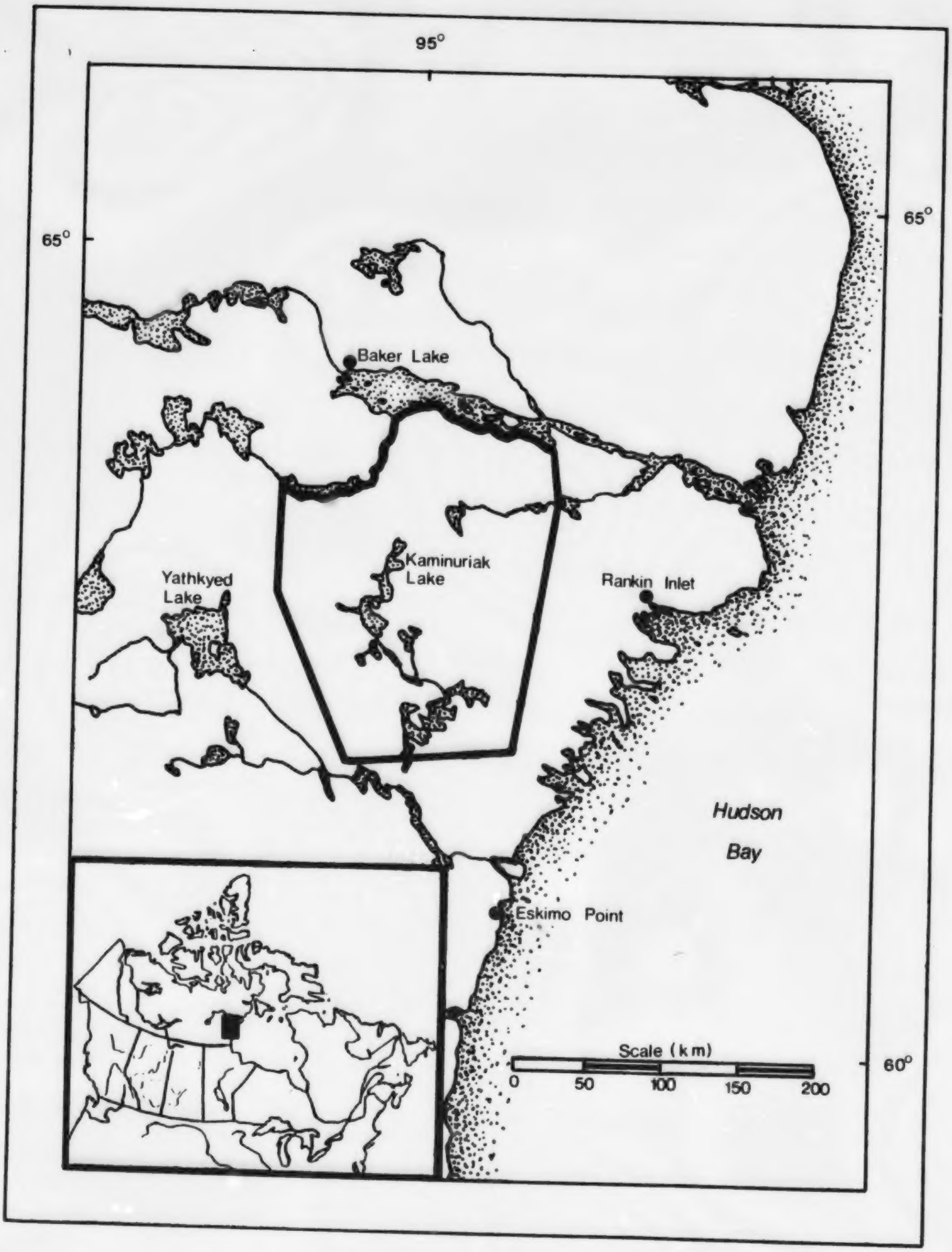

95°
65°
65°
60°
Baker Lake
Kaminuriak Lake
Yathkyed Lake
Rankin Inlet
Hudson Bay
Eskimo Point
Scale (km)
0
50
100
150
200

Figure 6. KAMINURIAK CARIBOU CALVING GROUND

Name: KAMINURIAK CARIBOU CALVING GROUND

Reference Number: 4

Schedule: 1

Location: The approximate geographic centre of the Kaminuriak Caribou Calving Ground is located at 63°00'N, 95°10'W, 150 km south of the settlement of Baker Lake in the District of Keewatin.

Size: 33,400 km2

Boundary: The boundary is based on known concentration areas for calving caribou. During the period from 1963 to 1984, the calving ground of the Kaminuriak Herd has been surveyed in 18 different years. Shifts in the location of concentration areas have occurred from year to year and some caribou have calved outside the boundary, but the highest densities of calving caribou have consistently been recorded within the delineated area.

Natural Setting: The Kaminuriak Caribou Calving Ground lies within the Kazan Upland physiographic region (Bostock 1970). Bedrock outcrops of volcanic origin are widespread in the north and south and appear as low, rounded hills (Fleck and Gunn 1982, Wright 1967). Granitic gneiss underlies the central portion of the calving ground, with many outcrops of varying size and shape (Wright 1955). Pockets of marine silts are scattered throughout the area, but there are no extensive deposits of glacial origin. Average elevation is 100 m asl. Vegetation on the calving ground is characteristic of the southern Keewatin cover types: rock barrens, lichen, steppe, lichen-heath tundra, dwarf shrub-lichen tundra, dwarf shrub-sedge tundra, tussuck tundra, sedge meadow, and transition forest (Thompson et al. 1978). The calving ground is dotted with many lakes and ponds, most of which drain in a southeasterly direction into Hudson Bay.

Importance to Wildlife: The area is of special interest to the Department of Renewable Resources because it represents the core calving ground of the Kaminuriak Caribou Herd. The most recent (1983) calving ground survey yielded a population estimate of 100,000 - 140,000 caribou (by visual survey techniques) and 180,000 - 280,000 caribou (by photographic survey techniques) (D. Heard pers. comm.). Calving generally occurs between 1 and 10 June, with dispersal of cows and calves from the calving ground occurring in late June and in the first half of July (Mychasiw 1984). Post-calving movements of Kaminuriak caribou are variable and range from a southeasterly to northwesterly direction.

The coastal sedge lowlands south of the Kaminuriak Caribou Calving Ground are an important nesting area for lesser snow geese, and have been identified as a Key Migratory Bird Terrestrial Habitat Site (McCormick et al. 1984).

Other Conservation Interests: The eastern portion of the delineated area overlaps with a proposed IBP site (Kaminuriak Lake Area) (Nettleship and Smith 1975), and the northeastern corner has been identified by Parks Canada as part of a preliminary area of interest for national park purposes (Canada Department of the Environment 1984d).

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations. Since 1978, the Department of Indian and Northern Affairs has imposed additional controls on land-use operations in the form of the Caribou Protection Measures. Their purpose is to prevent potentially harmful contact between caribou and land-use activities during the calving and post-calving seasons (Mychasiw 1984). The Caribou Protection Measures apply to the Beverly and Kaminuriak caribou herds.

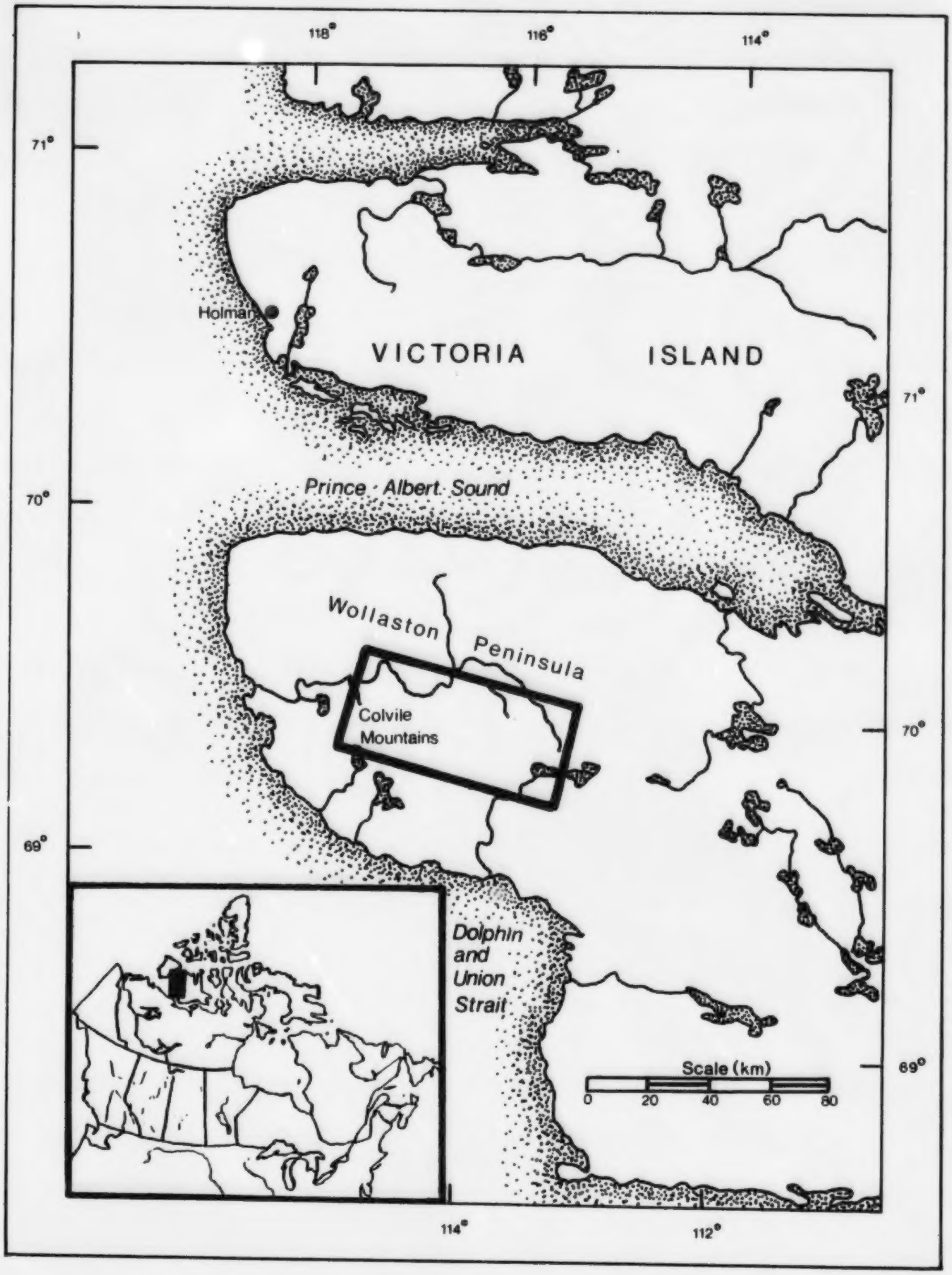

118°
116°
114°
71°
70°
69°
Holman
VICTORIA ISLAND
Prince Albert Sound
Wollaston Peninsula
Colvile Mountains
Dolphin and Union Strait
Scale (km)
0
20
40
60
80
114°
112°

Figure 7. COLVILE MOUNTAINS

Name: COLVILE MOUNTAINS

Reference Number: 5

Schedule: 2

Location: The approximate geographic centre of the delineated area is located at 69°35'N, 115°00'W, 160 km southeast of Holman in the District of Franklin.

Size: 2,800 km2

Boundary: The delineated area is a probable calving area for caribou, but aerial surveys during the calving period are required for confirmation. The most recent survey of Victoria Island was completed in 1980 by Jakimchuk and Carruthers (1980), but their investigations were carried out during the latter part of the post-calving period. They identified the Colvile Mountains as a highly probable calving area, based mainly on verbal reports from local residents and aircraft pilots. The boundary is subject to considerable change pending further study of Victoria Island caribou.

Natural Setting: The Colvile Mountains lie within the Victoria Lowland physiographic region, a smooth, undulating lowland underlain by flat-lying sedimentary strata and covered by a variety of glacial deposits (Bostock 1970). The Colvile Mountains form part of the Wollaston Peninsula morainal belt, a very rugged and complex network of conical, ridge-like and irregular hills (Jakimchuk and Carruthers 1980). Other glacial landforms, including meltwater channels, eskers and raised beaches, are commonly associated with the morainal belt. Vegetation on Wollaston Peninsula is representative of the Low Arctic Ecosystem type (Edlund 1983). Plant cover is nearly continuous on all but the most coarse and dry materials and is dominated by Dryas species, a variety of legumes and grasses, and dwarf shrubs. Wetlands support dense and diverse sedge meadows with an abundance of graminoid species and shrubs, including willows, arctic heather, blueberry, bear berry and dwarf birch.

Importance to Wildlife: Jakimchuk and Carruthers (1980) reported that the Colvile Mountains are a highly probable calving area for caribou. (The taxonomic status of these caribou is undetermined; they may represent an intermediate form between Peary caribou and barren-ground caribou [A. Gunn pers. comm.]). Post-calving movements are thought to take place east and northeast of the Colvile Mountains during late June and July towards post-calving areas at the head of Prince Albert Sound. In August 1980, the highest densities and numbers of caribou on Victoria Island occurred on Prince Albert Peninsula. Similar distributions were observed during 1958-59 (Macpherson 1961). The caribou population on Victoria Island was estimated at approximately 8,000 animals in 1980 (Jakimchuk and Carruthers 1980).

The many, small lakes in the central part of Wollaston Peninsula provide important habitat for a large number and high diversity of waterfowl and shorebirds (Canada Department of the Environment 1983d).

Other Conservation Interests: None has been identified.

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations.

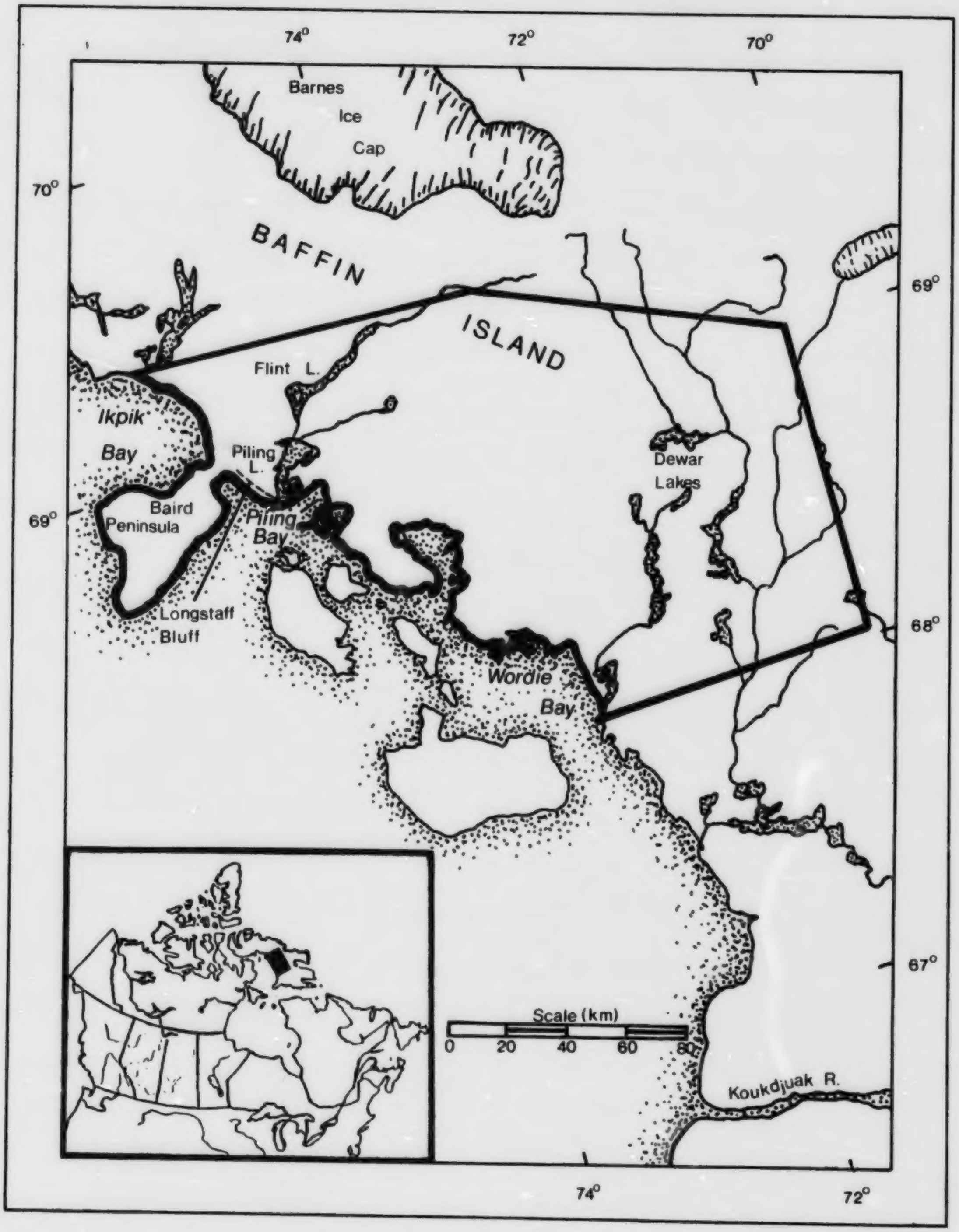

74°
72°
70°
Barnes
Ice
Cap
70°
BAFFIN
ISLAND
69°
Flint L.
Ikpik
Bay
Piling
L.
Dewar
Lakes
Baird
Peninsula
69°
Piling
Bay
Longstaff
Bluff
68°
Wordie
Bay
67°
Scale (km)
0
20
40
60
80
Koukdjuak R.
74°
72°

Figure 8. DEWAR LAKES

Name: DEWAR LAKES

Reference Number: 6

Schedule: 2

Location: The approximate geographic centre of the delineated area is located at 68°40'N, 73°00'W, 260 km southwest of the settlement of Clyde River in the District of Franklin.

Size: 23,700 km^2

Boundary: The preliminary boundary encompasses a large area in west-central Baffin Island and includes all of the areas in which caribou have been known to calve since the late 1960s. Baffin Island caribou have been surveyed less frequently than some Keewatin mainland herds; accordingly, biologists do not know how calving distributions change from year to year. Caribou are likely to be concentrated within a relatively small part of the delineated area in a given year (M. Ferguson pers. comm.). Additional surveys are needed to determine the relative importance of discrete calving areas within the general area.

Natural Setting: The delineated area lies within two physiographic regions: the Baffin Upland and Foxe Plain (Bostock 1970). Baird Peninsula represents a small part of the Foxe Plain, a low, smooth surface underlain by Paleozoic bedrock. Elevations on Baird Peninsula do not exceed 100 m asl. The remainder of the delineated area comprises part of the Baffin Upland, a rugged upland of Precambrian origin which slopes southwestward from 900 m asl near Barnes Ice Cap to near sea level around Foxe Plain (Bostock 1970). The delineated area contains many lakes of variable size, and drainage patterns are well developed in a northeast-to-southwest direction. Glacial features include eskers, moraines, and U-shaped valleys; raised beaches are common near the Foxe Basin coastline (Elliott 1972). Vegetation ranges from predominantly barren hills and plateaus in the eastern highlands, to lush growths of grasses and sedges on the coastal plains to the west (Elliott 1972).

Importance to Wildlife: The delineated area includes the Longstaff Bluff, Baird Peninsula and Dewar Lakes caribou calving areas; together, they probably support the greatest numbers of calving caribou on Baffin Island (M. Ferguson pers. comm.), but recent population estimates are lacking. Calving generally occurs during the second and third weeks of June (Elliott 1972, Redhead and Land 1979). Cows and calves disperse from Dewar Lakes and Longstaff Bluff in July, with movements to the coastal lowlands. In early July 1984, R. Decker (pers. comm.) estimated 4,500 - 7,500 caribou (excluding calves) within 4 km of the coastline between Piling Bay and Wordie Bay. Post-calving groups of caribou arrive at the north shore of the Koukdjuak River in mid- to late July (Kraft 1984). Redhead and Land (1979) recommended that the calving grounds be protected from incompatible land uses from 15 May to 15 July.

The coastal areas of Ikpik Bay and Piling Bay, and the lowlands around Flint and Piling lakes, provide habitat for greater and lesser snow geese and brant (McCormick and Adams 1984).

Other Conservation Interests: None has been identified.

Protective Status: Land-use activities are regulated under the *Territorial Lands Act* and Territorial Land Use Regulations.

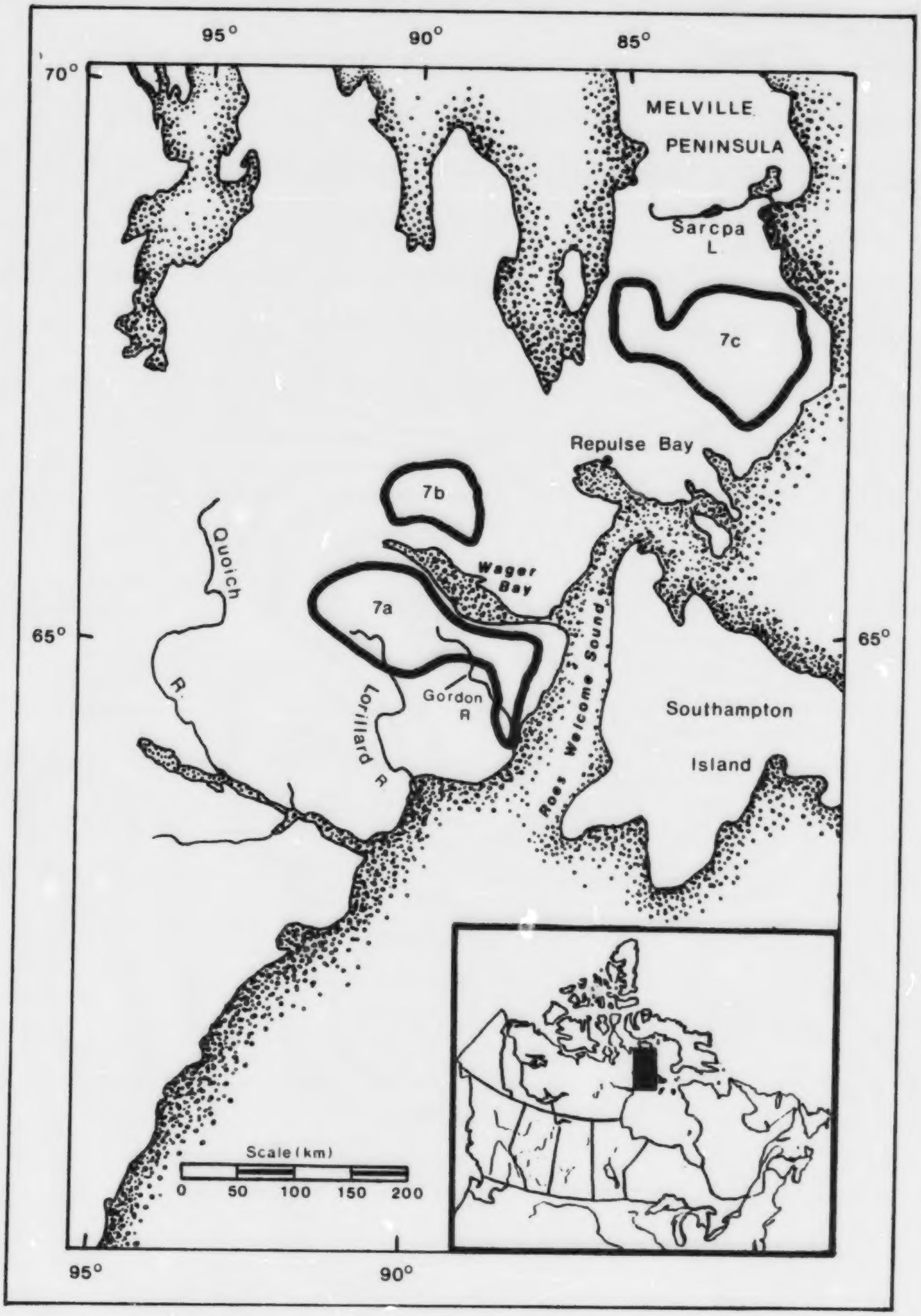

95°
90°
85°
70°
MELVILLE
PENINSULA
Sarcpa L
7c
Repulse Bay
7b
Quoich R
Wager Bay
7a
65°
65°
Lorillard R
Gordon R
Roes Welcome Sound
Southampton
Island
Scale (km)
0 50 100 150 200
95°
90°

Figure 9. NORTHEASTERN KEEWATIN CARIBOU CALVING GROUNDS

Name: NORTHEASTERN KEEWATIN CARIBOU CALVING GROUNDS

Reference Number: 7

Schedule: 2

Location: The calving grounds of the Lorillard (7a), Wager (7b) and Melville (7c) herds are scattered over a fairly large area centred around 66°30'N, 87°30'W. The nearest settlement is Repulse Bay, 55 km east of the geographic centre of this area.

Size: Lorillard calving area - 12,000 km^2; Wager calving area - 5,000 km^2; Melville calving area - 11,000 km^2 (Total - 28,000 km^2).

Boundary: The boundaries of the three calving grounds are preliminary because they are based on limited data. They are derived from the distribution of calving caribou in two years, 1976 and 1977 (Calef and Heard 1981, Heard et al. 1986). Since then, attempts to survey these herds during the calving season have been hampered by poor weather and other logistical problems. However, at least some calving occurred within the delineated areas every year that surveys were attempted (Heard et al. 1986). The most recent survey was conducted in May 1983, prior to calving, to take advantage of typically stable weather at that time of year (Allison and Peterson 1985). The highest caribou densities in 1983 corresponded to the locations of the previously documented calving areas (Heard et al. 1986).

Natural Setting: The northeastern Keewatin lies within two physiographic regions: the Wager Plateau and the Melville Plateau (Bostock 1970). The Wager Plateau rises gradually from sea level at Roes Welcome Sound to 600 m asl inland. The mainland part of Melville Plateau is largely a featureless, smooth upland, 450 - 600 m asl, with rugged areas along its western border. The topography north of Wager Bay is characterized by a rolling to hilly upland with boulder fields, bedrock outcrops, and localized glacial features in the form of eskers, drumlinoid hills and fluted moraine (Canada Department of the Environment 1983a,1984a). Marine deposits occupy low-lying sites. South of Wager Bay, the topography is more variable and ranges from rolling to hilly to mountainous. Thick, glacio-fluvial deposits and kames occur along the length of the Gordon River (Ouimet In prep.). Vegetation consists mainly of lichens, mosses, heath and willow. Sedge, moss and grass communities occupy wet depressions. Rock outcrops are generally dominated by lichens or are barren.

Importance to Wildlife: The most recent (1983) population estimates for the Northeastern Keewatin Caribou herds are 23,300 for the Lorillard Herd, 15,200 for the Wager Herd and 38,000 for the Melville Herd (Heard et al. 1986). The seasonal ranges and movement patterns of the Northeastern Keewatin herds are unknown, but they are assumed to inhabit the tundra year-round (Allison and Peterson 1985). Further studies are required to address these data gaps. Some cows on Melville Peninsula apparently move north after calving; cows with calves have been observed near Sarcpa Lake on northeastern Melville Peninsula in mid-July (Heard et al. 1986). Most calving probably occurs during the first half of June.

The Quoich River valley and associated wetlands, located west of the Lorillard calving ground, are important habitats for moulting Canada geese from mid-June to late August (McCormick et al. 1984). The coastal areas of Wager Bay provide important seasonal habitats for polar bear (see Wager Bay, page 169), and the Wager Bay area is important to nesting peregrine falcons (see Ford Lake, page 87).

Other Conservation Interests: A large area centred around Wager Bay has been designated as a Natural Area of Canadian Significance and proposed as a national park reserve (Canada Department of the Environment 1984d). This area overlaps with parts of the Lorillard and Wager caribou calving areas.

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations.

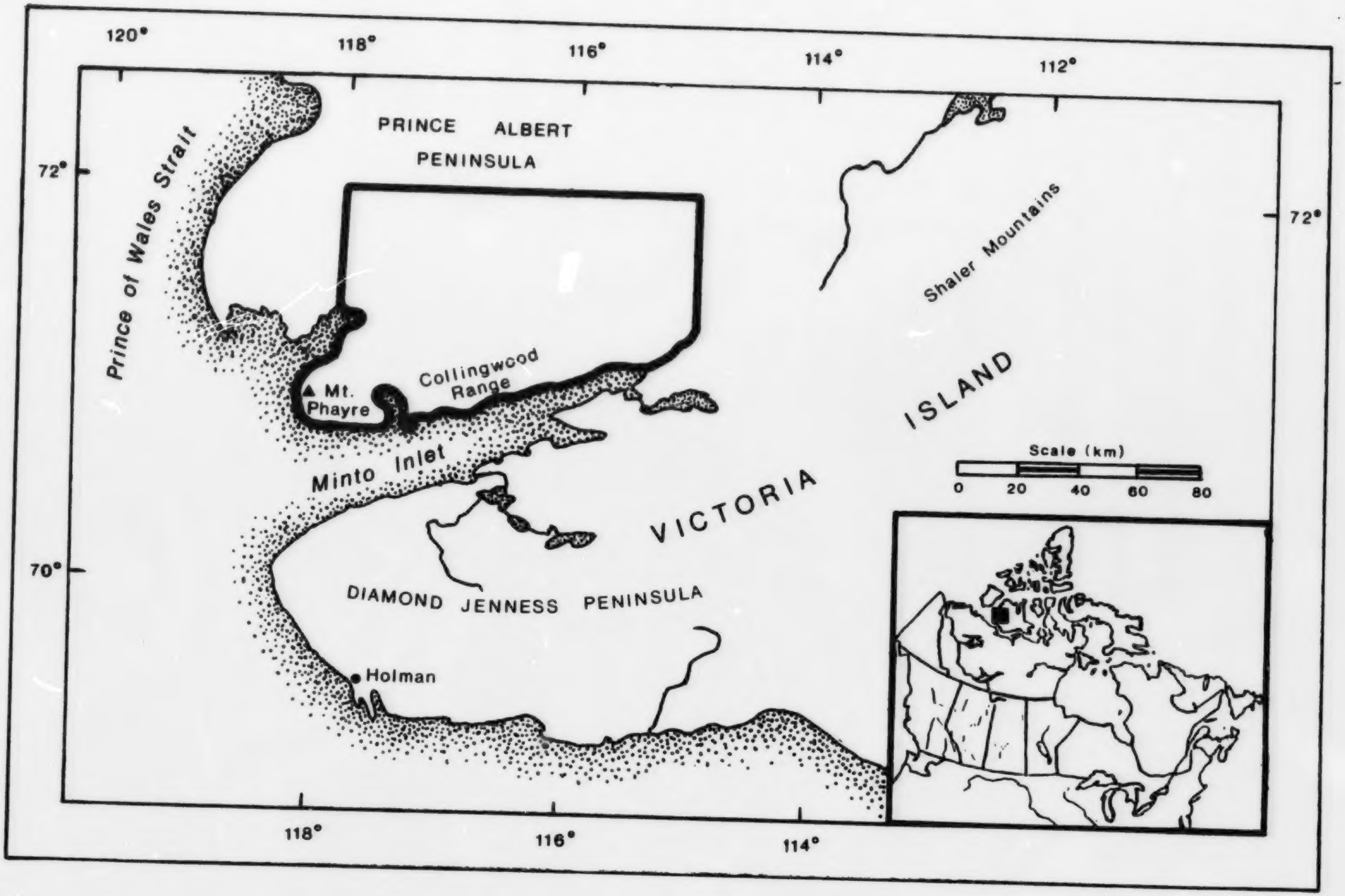

120°
118°
116°
114°
112°
72°
72°
70°
PRINCE ALBERT PENINSULA
Prince of Wales Strait
Shaler Mountains
Mt. Phayre
Collingwood Range
Minto Inlet
VICTORIA ISLAND
DIAMOND JENNESS PENINSULA
Holman
Scale (km)
0
20
40
60
80
118°
116°
114°

Figure 10. PRINCE ALBERT PENINSULA

Name: PRINCE ALBERT PENINSULA

Reference Number: 8

Schedule: 2

Location: The approximate geographic centre of the delineated area is located at 71°40'N, 116°30'W, 120 km north of the settlement of Holman in the District of Franklin.

Size: 6,900 km2

Boundary: The delineated area is a probable calving area for Peary caribou, but aerial surveys during the calving period are required for confirmation. Jakimchuk and Carruthers (1980) surveyed Victoria Island during the latter part of the post-calving period (August), and reported that the highest densities and numbers of caribou occurred on Prince Albert Peninsula. Their speculations concerning the probable locations of calving areas were based primarily on verbal reports from local residents and aircraft pilots.

Natural Setting: The Prince Albert Peninsula area lies within the Shaler Mountains and Victoria Lowland physiographic regions (Bostock 1970). The Shaler Mountains bisect Victoria Island along a northeast-southwest syncline, forming a hilly to mountainous axis with elevations reaching 760 m asl (Canada Department of the Environment 1982b,1983b). The

Collingwood Range parallels the northern coast of Minto Inlet and is composed of ridges, plateaus, buttes and cuestas with steep escarpments and linear valleys (Jakimchuk and Carruthers 1980). The Victoria Lowland is a smooth, undulating lowland underlain by flat-lying, sedimentary strata and is covered by a variety of morainal and other glacial deposits (Bostock 1970). The morainal areas of Prince Albert Peninsula have a local relief of up to 215 m (Jakimchuk and Carruthers 1980). Vegetation on the southern parts of Prince Albert Peninsula is characterized by the Low Arctic Ecosystem and Mid Arctic Ecosystem types (Edlund 1983). In the Low Arctic type, dwarf shrubs are dominant and vegetation cover is nearly continuous. Wetlands support a continuous, dense cover of sedges, graminoid species and low shrubs. In the Mid Arctic type, dwarf shrubs dominate all but the wettest sites. Near the head of Minto Inlet, a few isolated thickets of felt leaf willow reach heights of up to 8 m (Edlund and Egginton 1984). These thickets are found in deep valleys and sheltered ravines along the north shore of the inlet, where microclimatic conditions are favourable.

Importance to Wildlife: Jakimchuk and Carruthers (1980) surveyed Victoria Island (except Storkerson Peninsula) in August 1980 and estimated the caribou population to be approximately 8,000 animals. The distribution of caribou during 1958-59 (Macpherson 1961) generally coincided with the 1980 survey results; the majority of caribou was found on northwestern Victoria Island. The calving areas of Prince Albert Peninsula caribou have not been located with certainty, but Jakimchuk and Carruthers (1980) suggested that the highlands of the peninsula (corresponding to the Collingwood Range and areas to the north) and the Colvile Mountains (see Colvile Mountains, page 43) are highly probable calving areas. Mount Phayre, located in the southwest corner of the delineated area, is considered to be an important wintering area for Peary caribou (A. Gunn pers. comm.). The coastal areas of Minto Inlet provide habitat for muskoxen (Jakimchuk and Carruthers 1980). The delineated area overlaps with part of an important nesting area for peregrine falcons (see Minto Inlet, page 99).

Other Conservation Interests: The eastern part of the delineated area overlaps with a proposed IBP site (Nettleship and Smith 1975).

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations.

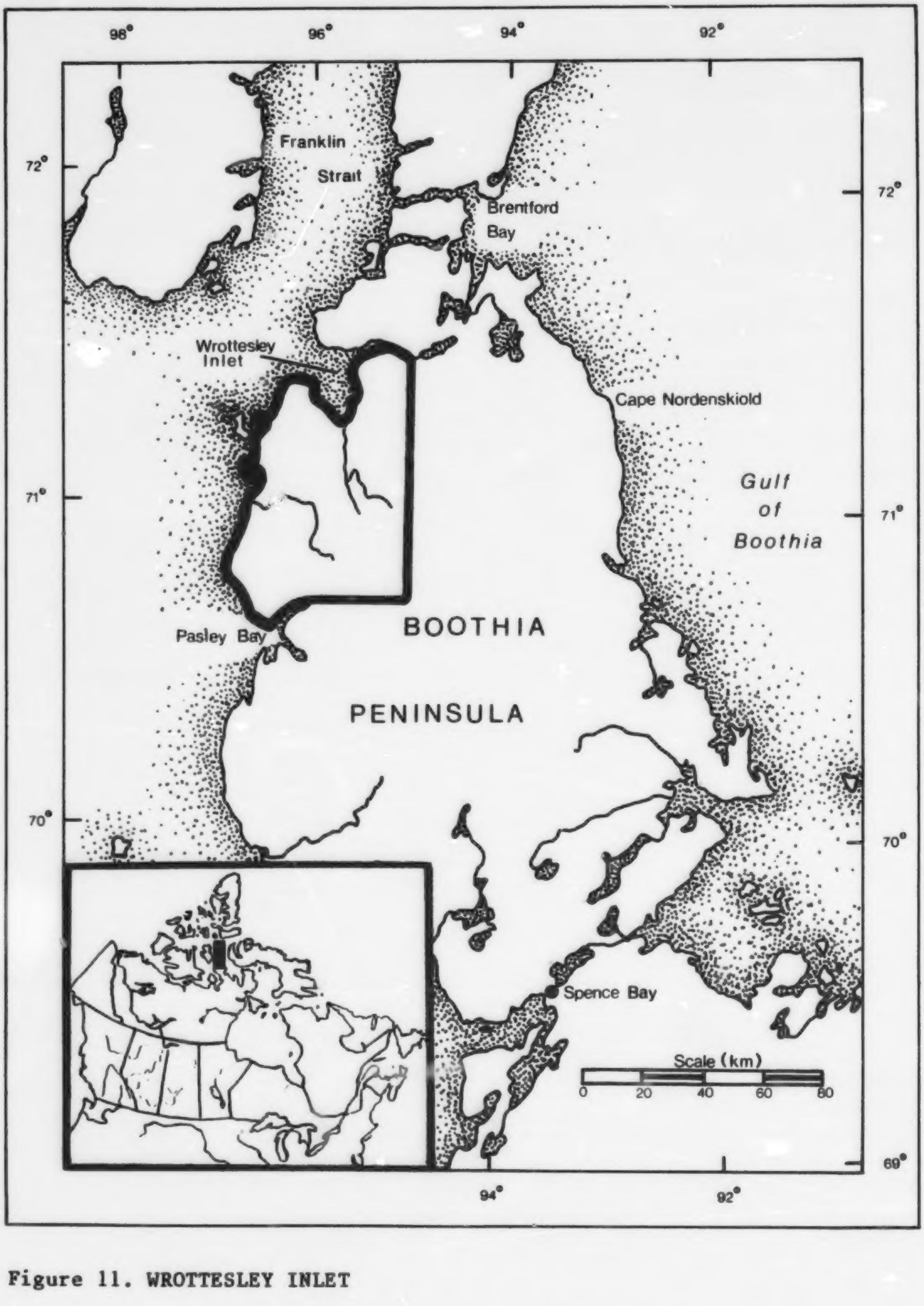

98°
96°
94°
92°
72°
71°
70°
69°
Franklin
Strait
Brentford
Bay
Wrottesley
Inlet
Cape Nordenskiold
Gulf
of
Boothia
Pasley Bay
BOOTHIA
PENINSULA
Spence Bay
Scale (km)
0
20
40
60
80

Figure 11. WROTTESLEY INLET

Name: WROTTESLEY INLET

Reference Number: 9

Schedule: 2

Location: The approximate geographic centre of the delineated area is located at 71°00'N, 95°50'W, 180 km northwest of the settlement of Spence Bay in the District of Franklin.

Size: 4,100 km^2

Boundary: The preliminary boundary is based on aerial survey data collected during the caribou calving periods in 1974 and 1975. During both years, concentrations of cow-calf pairs were consistently observed in the northwestern part of Boothia Peninsula between Pasley Bay and Wrottesley Inlet (Fischer and Duncan 1976). Russell et al. (1979) conducted field studies of caribou habitat use from 1975 to 1977, and suggested that calving may also occur on the north central highlands of Boothia Peninsula. However, they concluded that "further aerial reconnaissance during the month of June is required to clearly establish the locations of caribou calving grounds on Boothia Peninsula" (Russell et al. 1979:102).

Natural Setting: The delineated area lies within two distinct physiographic regions: the Boothia Plateau and the Victoria Lowland (Bostock

1970). The Boothia Plateau is a northward-projecting extension of the Precambrian Shield and is characterized by rugged, rocky hills and ridges with elevations approaching 600 m asl. Portions of the plateau are covered by a layer of coarse, calcareous till (Boydell et al. 1975). The vegetation associated with the bedrock outcrops and ridges is dominated by mosses and crustose lichens (Russell et al. 1979). The Boothia Plateau is bounded on the southwest by the well-vegetated, Paleozoic lowlands of the Victoria Lowland (Fischer and Duncan 1976). These areas are mostly flat and consist mainly of limestones. Russell et al. (1979) provide detailed descriptions of various plant communities on northern Boothia Peninsula.

Importance to Wildlife: The delineated area is believed to be the major calving area for caribou on Boothia Peninsula. (The taxonomic status of Boothia Peninsula caribou is uncertain [A. Gunn pers. comm.]; the population may represent an intermediate form of Peary caribou and barren-ground caribou [Russell et al. 1979].) Fischer and Duncan (1976) estimated the population size to be approximately 1,200 caribou in 1974-75. In June 1985, a population estimate of 4,500 caribou was calculated (A. Gunn pers. comm.). The population may be migratory, moving from the summer range on northwestern and northcentral portions of the peninsula, to wintering areas on eastern and northeastern portions. In March 1975, all of the caribou observed were located in the northeastern half of Boothia Peninsula (Fischer and Duncan 1976). Most were on the flat, well-vegetated lowlands between Brentford Bay and Cape Nordenskiold. Russell et al. (1979) also reported that the coastal lowland and beach ridge complex on northeastern Boothia Peninsula is prime wintering range.

The coastal areas of Boothia Peninsula are major concentration areas for polar bears in late winter, spring and summer (see Bellot Strait, page 141).

Other Conservation Interests: None has been identified.

Protective Status: Land-use activities are regulated under the *Territorial Lands Act* and Territorial Land Use Regulations.

DALL'S SHEEP

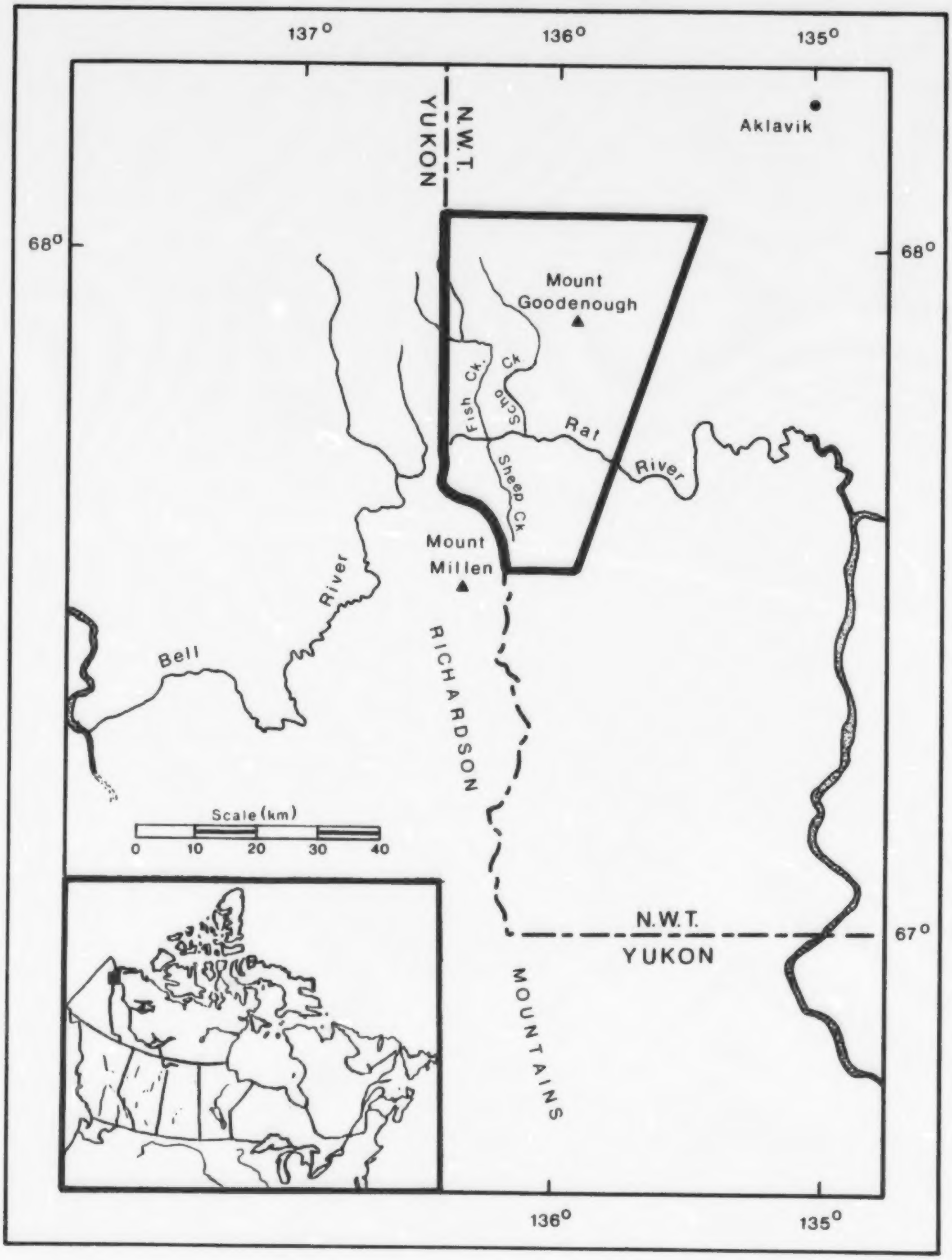

137°
136°
135°
68°
68°
67°
N.W.T.
YUKON
Aklavik
Mount
Goodenough
Fish Ck.
Scho Ck.
Rat
River
Sheep Ck.
Mount
Millen
River
Bell
RICHARDSON
MOUNTAINS
N.W.T.
YUKON
Scale (km)
0
10
20
30
40
136°
135°

Figure 12. MOUNT GOODENOUGH

Name: MOUNT GOODENOUGH

Reference Number: 10

Schedule: 1

Location: The approximate geographic centre of the delineated area is located at 67°50'N, 136°00'W, 60 km southwest of the community of Aklavik in the District of Mackenzie.

Size: 1,800 km2

Boundary: The delineated area encompasses important seasonal habitats for Dall's sheep, as determined from population surveys and associated studies between 1984 and 1986 (Barichello et al. In prep.). The important seasonal habitats include lambing cliffs, winter range, mineral licks and movement corridors. The western boundary follows the Yukon-Northwest Territories boundary (for administrative reasons), but contiguous sheep habitat also occurs in the Yukon, particularly in the vicinities of Mount Millen and the Bell River. Dall's sheep in the Richardson Mountains represent island populations at the northernmost extent of their distribution (Barichello et al. In prep.).

Natural Setting: The Mount Goodenough area lies within the Richardson Mountains physiographic region, a mountainous area having rugged peaks up to 1,675 m asl (Bostock 1970). These mountains do not appear to have been glaciated and are primarily composed of sandstones, shale, limestone and dolomite (Wiken et al. 1981). The topography is diverse and is characterized by sharp-crested, angular mountains, rocky slopes, deep V-shaped valleys and gently rolling hills (Barichello et al. In prep., Wiken et al. 1981). Frost action and fluvial and colluvial processes have played the major roles in sculpturing the landscape. Permafrost is continuous. Alpine tundra and arctic tundra are the predominant vegetation types. Tree cover (white spruce, willow and balsam poplar) is restricted to protected valleys, river floodplains and slopes having a southerly aspect. The most prevalent vegetation community is tussock-tundra with sedges and cotton-grass (Barichello et al. In prep.).

Importance to Wildlife: The northern part of the Richardson Mountains in the NWT and Yukon contains approximately 1,424 km^2 of habitable, Dall's sheep range (Barichello et al. In prep.). The most important habitat areas east of the territorial border occur within the delineated area, and include seven lambing areas, six mineral licks, nine winter ranges, and several movement corridors which link seasonal ranges. Sheep census data from 1984 to 1986 and monitoring of radio-collared rams indicated extensive seasonal movements in the northern Richardson Mountains and between the Yukon and NWT (Barichello et al. In prep.). Aerial surveys in 1984, 1985 and 1986 yielded maximum population estimates of 597, 690 and 882 Dall's sheep, respectively. The highest densities of sheep occurred in the vicinity of Mount Goodenough (between the headwaters of Fish Creek and Scho Creek) and south of the Rat River near Sheep Creek. Barichello et al. (In prep.) reported that "island" populations of Dall's sheep in the northern Richardson Mountains are likely less resilient to alteration of their habitats than populations in contiguous range, and recommended that land-use activities which may alter or impair important seasonal habitats should be restricted.

Barren-ground caribou of the Porcupine Caribou Herd pass through the northern Richardson Mountains during spring and fall migrations, and in some years may winter there (Ealey 1980, Hoffman 1975, Thompson 1978). The cliffs along the Rat River provide nesting habitat for raptors, including peregrine falcons (McCormick and Adams 1984).

Other Conservation Interests: A proposed IBP site centred at Canoe Lake is situated immediately north of the delineated area.

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations.

GYRFALCON AND PEREGRINE FALCON

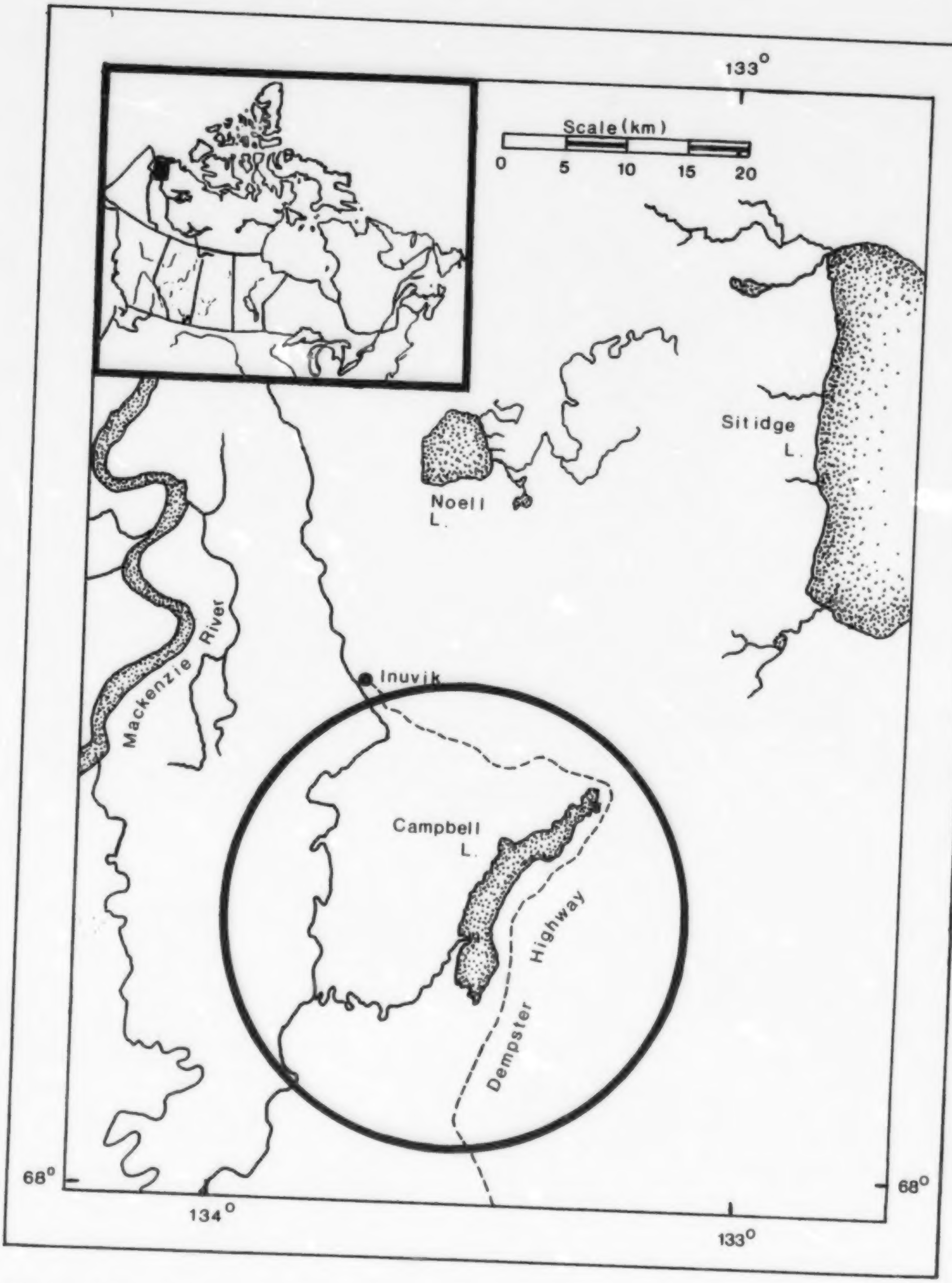

133°
Scale (km)
0
5
10
15
20
Sitidge L.
Noell L.
Mackenzie River
Inuvik
Campbell L.
Dempster Highway
68°
134°
133°
68°

Figure 13. CAMPBELL LAKE

Name: CAMPBELL LAKE

Reference Number: 11

Schedule: 1

Location: The approximate geographic centre of the Campbell Lake area is located at 68°10'N, 133°30'W, 20 km south of the settlement of Inuvik in the District of Mackenzie.

Size: 1,025 km2

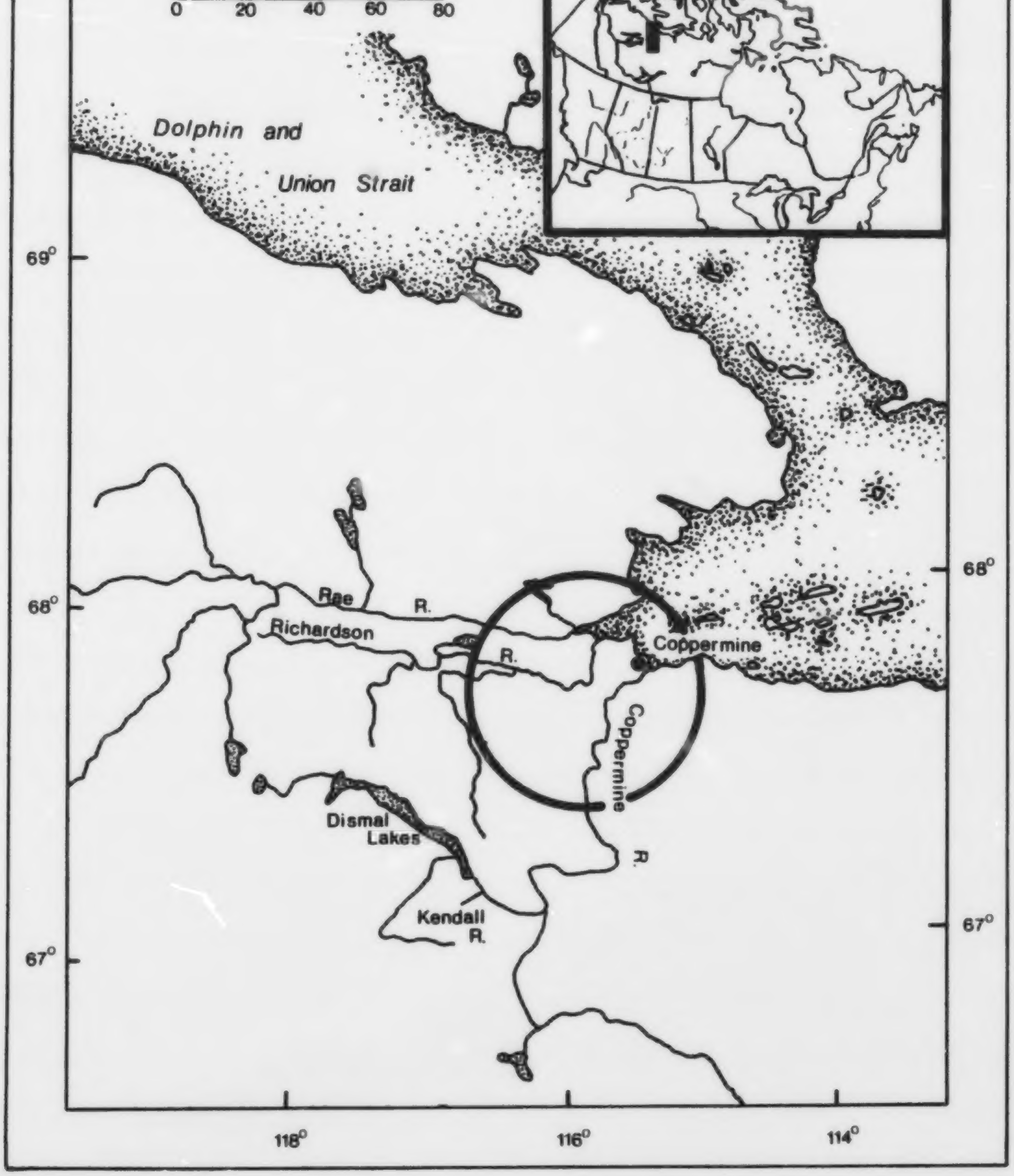
Boundary: Very general boundaries are drawn around raptor nesting areas (see page 18). The delineated area supports a relatively high number of peregrine falcon nest sites, as determined primarily through aerial surveys from the late 1960s to 1986 (Bromley and Matthews 1985, Cade and Fyfe 1970, Fyfe et al. 1976). The Campbell Lake population of peregrine falcons was first recorded in 1964, at which time five breeding pairs were located (Fyfe et al. 1976). Since that time, survey efforts have been extended to other parts of its breeding range, specifically along the Mackenzie River valley and adjacent mountain ranges. In 1985, the number of known peregrine falcon nest sites in the Campbell Lake area totalled 25 (Matthews 1986), accounting for 39 per cent of all known sites along the Mackenzie River valley north of Fort Norman (Bromley and Matthews 1985).

Natural Setting: The Campbell Lake area lies predominantly within the Anderson Plain physiographic region, a sloping, undulating plain covered by a sheet of glacial till and outwash (Bostock 1970). Inland, elevations rise to 300 m asl along an abrupt escarpment which is dissected by major drainages that flow northwards directly to the Arctic Ocean. West of Campbell Lake, a group of hills forms a rocky upland area with elevations exceeding 120 m asl. Steep limestone cliffs 30 - 90 m high parallel the west shore of Campbell Lake (Windsor and Gill 1975). Vegetation is highly variable, ranging from black spruce/muskeg communities and sedge meadows in lowlands and closed depressions, to forest communities of white spruce, balsam poplar, willows and alder on deltaic soils in upland areas. The scarps and screes of dolomitic limestone support rare plant assemblages, primarily herbs and lichens (Beckel 1975, Windsor and Gill 1975).

Importance to Wildlife: The delineated area provides important nesting habitat for the anatum subspecies of peregrine falcon, which is classified as "Endangered" by the Committee on the Status of Endangered Wildlife in Canada (Cook and Muir 1984). The limestone cliffs provide ideal nesting habitat, and the surrounding lowland and deltaic regions provide abundant prey (Canada Department of Fisheries and the Environment 1976). Since 1984, the peregrine population has been monitored regularly and has remained relatively constant, both in terms of site occupancy and productivity. Bromley and Matthews (1985) summarized the information from 1969 to 1985, and reported that a decrease in numbers of peregrines may have occurred in the late 1970s but that the population appeared to have recovered in the 1980s. In 1985, 44 per cent of all known peregrine nest sites near Campbell Lake were occupied by territorial birds (Matthews 1986). The nesting season for peregrine falcons in the lower Mackenzie valley occurs from May through August (S. Matthews pers. comm.).

Other Conservation Interests: The delineated area overlaps a proposed IBP site (Beckel 1975) and the southwestern part of the Reindeer Grazing Reserve (Northwest Territories Reindeer Regulations, P.C. 1955-329). The Department of Economic Development and Tourism, Government of the Northwest Territories, has been interested in the Campbell Lake area for territorial park purposes since 1970, and a feasibility study was completed in 1982 (Resources Management Consultants (NWT) Ltd. 1982). The park proposal is currently under review by the Federal-Territorial Lands Advisory Committee (R. Larson pers. comm.). The Canadian Wildlife Service has withdrawn formal interests in the area as a national wildlife area (see Canada Department of Fisheries and the Environment 1976), but is fully supportive of conservation efforts directed towards the protection of the areas' wildlife resources (K. McCormick pers. comm.).

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations, the Northwest Territories Reindeer Regulations, the Municipal Act and Planning Act (for municipal lands within the community of Inuvik), and the Area Development Act (for lands comprising the Dempster Highway right-of-way).



118°
116°
Scale (km)
0
20
40
60
80
Dolphin and
Union Strait
69°
68°
68°
Rae
R.
Richardson
R.
Coppermine
Coppermine
R.
Dismal
Lakes
Kendall
R.
67°
67°
118°
116°
114°

Figure 14. COPPERMINE RIVER

Name: COPPERMINE RIVER

Reference Number: 12

Schedule: 1

Location: The approximate geographic centre of the Coppermine River area is located at 67°45'N, 115°45'W. The delineated area encompasses the settlement of Coppermine in the District of Mackenzie.

Size: 10,500 km2

Boundary: Very general boundaries are drawn around raptor nesting areas (see page 18). Aerial surveys from 1983 to 1986 revealed a relatively high density of nesting raptors, particularly peregrine falcons, gyrfalcons, golden eagles and rough-legged hawks, within the delineated area. Survey effort was directed toward areas of prime potential habitat. Nesting habitat in surrounding areas is generally lower in quality and quantity (R. Bromley pers. comm.).

Natural Setting: The Coppermine River area lies predominantly within the Coronation Hills physiographic region (Bostock 1970). The northern and southeastern parts fall within the Horton Plain and Bear-Slave Upland physiographic regions, respectively. Along the Rae and Richardson rivers elevations are low (less than 100 m asl), but in the southwest the Coronation Hills region rises to 600 m asl, forming dissected ridges and hills and broad, smooth-topped uplands. Northeast of Dismal Lakes, eskers, drumlins, bedrock outcrops and areas of glacial outwash are common (Canada Department of Fisheries and the Environment 1978a). Vegetation ranges from lichen tundra and open shrubland on upland areas to open shrubland and scattered stands of black spruce in the protected valleys of the Coppermine and Kendall rivers. Shrublands and wet meadow vegetation are particularly lush on the low-lying lacustrine sediments along the Rae and Richardson rivers.

Importance to Wildlife: The broad, open stretches of well-vegetated tundra, interspersed with cliffs 10 - 40 m in height, provide excellent nesting habitat for a variety of raptor species, including peregrine falcons, gyrfalcons, golden eagles and rough-legged hawks (Bromley and McLean 1986). Approximately 115 nest sites (excluding those of rough-legged hawks) have been identified within the delineated area (NWT Wildlife Service unpubl. data). (This total includes raven nests because they are often used in subsequent years for nesting by gyrfalcons [Poole and Bromley 1985].) For gyrfalcons, egg-laying begins in the first half of May, with fledging in late July to early August (Bromley and McLean 1986). Egg-laying by peregrine falcons occurs from early to mid-June, with fledging from mid- to late August. Prey species, including ptarmigan, arctic ground squirrels, waterfowl and passerines, are generally abundant within the delineated area.

The western edge of the Coppermine River area overlaps with important year-round range for muskoxen (see Horton Plain, page 127).

Other Conservation Interests: The Canada Department of the Environment (1982a) identified the Coppermine River - Dolphin and Union Strait area as one of Canada's "Special Places in the North".

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations.

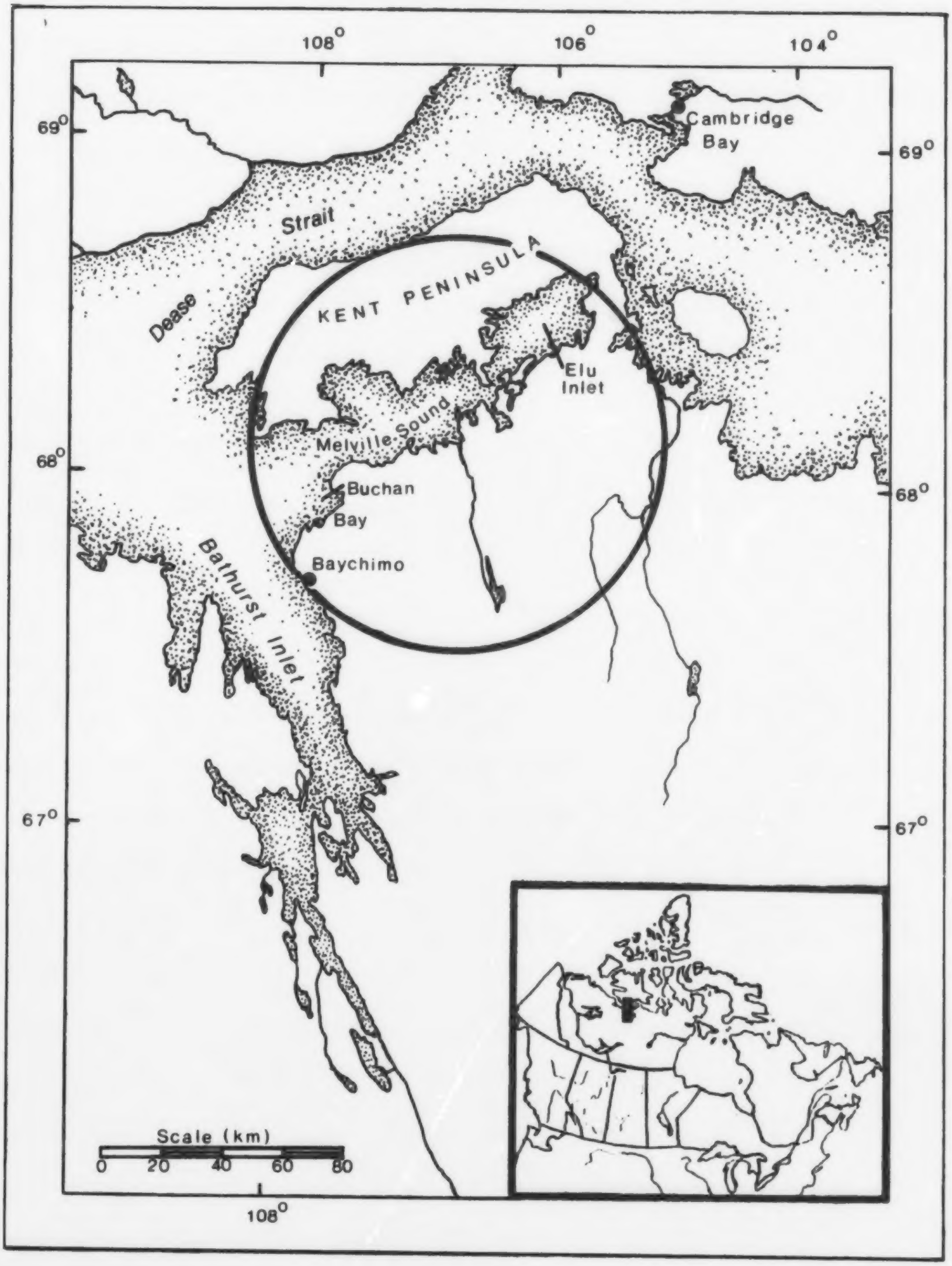

108°
106°
104°
69°
69°
68°
68°
67°
67°
108°
Cambridge Bay
Strait
Dease
KENT PENINSULA
Elu Inlet
Melville Sound
Buchan Bay
Baychimo
Bathurst Inlet
Scale (km)
0
20
40
60
80

Figure 15. MELVILLE SOUND

Name: MELVILLE SOUND

Reference Number: 13

Schedule: 1

Location: The approximate geographic centre of the Melville Sound area is located at 68°10'N, 106°45'W, 70 km northeast of the settlement of Baychimo in the District of Mackenzie.

Size: 15,000 km^2

Boundary: Very general boundaries are drawn around raptor nesting areas (see page 18). The delineated area provides important nesting habitat for several raptors, including gyrfalcons, peregrine falcons, golden eagles and rough-legged hawks. The importance of this area to raptors was first recognized in 1982 (Bromley 1983) and later confirmed by aerial and ground surveys from 1983 to 1986 (Poole 1985, Poole and Bromley 1985, K. Poole pers. comm.). Survey efforts focused primarily on gyrfalcons, although nesting information for all raptors (and ravens) was systematically recorded.

Natural Setting: The Melville Sound area lies within three physiographic regions: the Back Lowland, Victoria Lowland and Coronation Hills regions (Bostock 1970). The Back Lowland is dominant and is characterized by rolling, rocky hills and ridges, numerous small lakes, and low-lying plains covered by marine deposits (Canada Department of Fisheries and the Environment 1978b). The southwestern part of Kent Peninsula is an extension of the Coronation Hills which are formed of gently northward dipping sediments intruded by sills and dikes of igneous rock (Bostock 1970). The remainder of Kent Peninsula forms part of the Victoria Lowland and is characterized by level to gently rolling topography covered by a mixture of glacial till and marine deposits. Within the delineated area, elevations rarely exceed 200 m asl except for a small group of hills east of Buchan Bay. Vegetation varies from open shrubland and lichen tundra on inland areas to sedge meadows and salt marshes near coastal areas (Canada Department of Fisheries and the Environment 1978b).

Importance to Wildlife: The delineated area is of major importance to nesting birds of prey, particularly gyrfalcons, peregrine falcons and golden eagles. Approximately 125 nest sites have been located within this area (including raven nest sites which are often used for nesting by gyrfalcons) (NWT Wildlife Service unpubl. data). Cliffs used for nesting by gyrfalcons and peregrine falcons averaged 24 m and 16 m in height, respectively (Poole and Bromley 1985). Nest sites generally have eastern, southern or western exposures and often are characterized by having complete overhangs above the nest (at least for gyrfalcons). Nesting begins in mid- to late April for golden eagles, early to mid-May for gyrfalcons, and late May to early June for peregrine falcons (Poole 1985, Poole and Bromley 1985). From 1982 to 1985, the number of active territories per year ranged from 18 to 26 for peregrine falcons, 11 to 18 for gyrfalcons, and 10 to 20 for golden eagles (Poole 1985). Rock ptarmigan and arctic ground squirrels are common within the delineated area and constitute the main prey of gyrfalcons during the nesting season (Poole 1985). There is some evidence to suggest that gyrfalcons may over-winter in the area (Poole and Bromley 1985).

The Bathurst Caribou Calving Ground (see page 27) is located immediately southeast of the delineated area. After a long absence, caribou have returned in recent years to the Kent Peninsula during winter, and muskoxen occupy the area around Elu Inlet (A. Gunn pers. comm.).

Other Conservation Interests: The eastern part of the delineated area overlaps the Queen Maud Gulf Migratory Bird Sanctuary. The coastal waters around Kent Peninsula have been identified by Parks Canada as a preliminary, marine area for park purposes (Canada Department of the Environment 1984d). Parks Canada is also interested in the area around Bathurst Inlet for national park purposes (Scotter 1985).

Protective Status: Land-use activities are regulated under the *Territorial Lands Act* and Territorial Land Use Regulations.

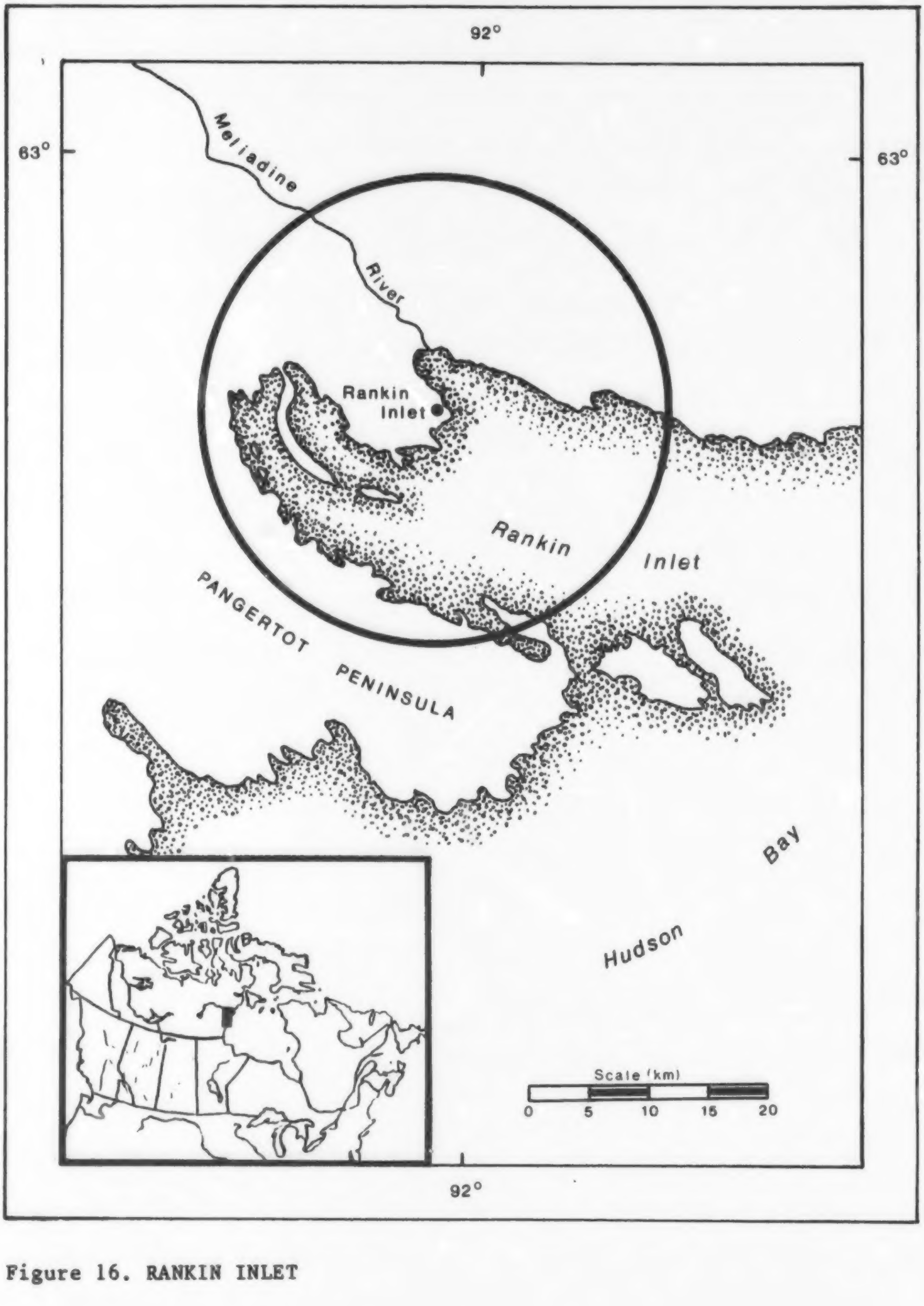

92°
63°
63°
Melliadine River
Rankin Inlet
Rankin Inlet
PANGERTOT PENINSULA
Hudson Bay
Scale (km)
0
5
10
15
20
92°

Figure 16. RANKIN INLET

Name: RANKIN INLET

Reference Number: 14

Schedule: 1

Location: The approximate geographic centre of the Rankin Inlet area is located at 62°50'N, 92°05'W; the delineated area encompasses the settlement of Rankin Inlet in the District of Keewatin.

Size: 1,150 km2

Boundary: Very general boundaries are drawn around raptor nesting areas (see page 18). The delineated area provides important nesting habitat for peregrine falcons. Efforts to document the size of the peregrine falcon population at Rankin Inlet were initiated in 1980, but detailed information was not obtained until 1981. The population was studied intensively from 1981 to 1985 (Court 1986) and further work is ongoing (C. Shank pers. comm.). Results from these studies form the basis for the site's nomination as a Wildlife Conservation Area.

Natural Setting: The Rankin Inlet area lies within the Kazan Upland physiographic region, a broad expanse of rolling, Precambrian Shield country that extends west from Hudson Bay to Great Slave Lake (Bostock 1970). Along Hudson Bay, the upland appears as a low-lying coastal plain and is covered by post-glacial marine deposits and re-worked glacial till which mask nearly all the underlying bedrock (Lee 1959). Within the delineated area, rock outcrops up to 53 m in height are a prominent feature of the landscape, particularly on the offshore islands in Rankin Inlet (Court 1986). Fluted ridges and eskers also contribute to the topographic relief of the coastal plain (Canada Department of the Environment 1980a). Lichens, heaths and low shrubs, particularly Labrador-tea, mountain cranberry and crowberry, are the predominant plant communities (Canada Department of the Environment 1980a, Court 1986). Sedges and mosses are characteristic of wet depressions. Lakes and tundra ponds are numerous; rivers and streams flow southeasterly into Hudson Bay.

Importance to Wildlife: The delineated area supports the most concentrated population of nesting peregrine falcons recorded at arctic latitudes (Court 1986). Between 1981 and 1985, the number of occupied territories ranged from 17 to 26 and nesting occurred on 29 separate cliffs. Cliff faces used for nesting ranged from 7 to 30 m in height, most were located relatively close to water bodies, and most had either a southern or western exposure. Court (1986:7) reported that bedrock outcrops "with rock faces large enough to be of significance to cliff-nesting raptors occur as much as 6 km inland and on islands as far out to sea as 4 km". At Rankin Inlet, peregrine falcons establish territories from mid- to late May, with egg-laying occurring during the first two weeks of June and fledging of young during the last 10 days of August. Studies indicate that both male and female peregrines exhibit a high degree of fidelity to territories and nest sites (Court 1986). A variety of prey species make up the peregrine's diet at Rankin Inlet, including passerines, shorebirds, waterfowl, seabirds and small mammals (Court 1986). Rough-legged hawks and a few gyrfalcons also nest within the delineated area (NWT Wildlife Service unpubl. data).

Other Conservation Interests: A small area centred around the lower reaches of Meliadine River was nominated as an IBP site (Nettleship and Smith 1975). Parks Canada has expressed preliminary interest in an area around Chesterfield Inlet, and extending as far south as Rankin Inlet, for national park purposes (Canada Department of the Environment 1984d).

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations, and the Municipal Act and Planning Act (for municipal lands within the community of Rankin Inlet).

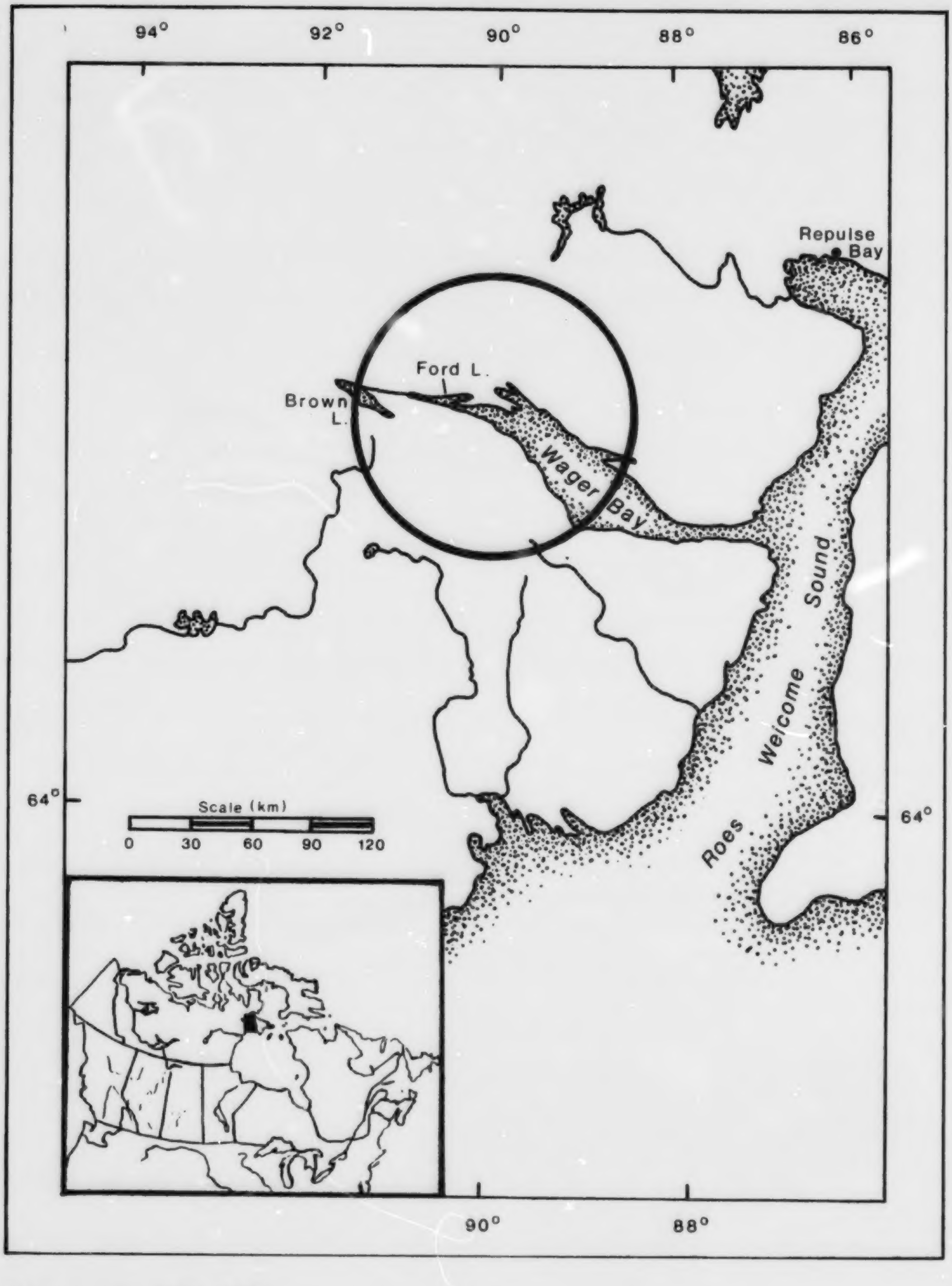

94°
92°
90°
88°
86°
Repulse Bay
Ford L.
Brown L.
Wager Bay
Sound
Welcome
Roes
64°
64°
Scale (km)
0
30
60
90
120
90°
88°

Figure 17. FORD LAKE

Name: FORD LAKE

Reference Number: 15

Schedule: 2

Location: The approximate geographic centre of the Ford Lake area is located at 65°50'N, 90°05'W, 190 km southwest of the settlement of Repulse Bay in the District of Keewatin.

Size: 17,700 km^2

Boundary: Very general boundaries are drawn around raptor nesting areas (see page 18). The delineated area contains a relatively high density of nesting peregrine falcons; a few nest sites are also known to occur in the surrounding area. Our present knowledge of raptor nesting distributions on the Wager Plateau is limited because only a small fraction of the area has been surveyed (see Calef and Heard 1980). Future search efforts of similar intensity in other areas of rugged topography may reveal additional important nesting habitat.

Natural Setting: The delineated area lies within the Wager Plateau physiographic region, a rocky upland which rises gradually from sea level at Roes Welcome Sound to 600 m asl inland (Bostock 1970). The topography north of Wager Bay is characterized by a rolling to hilly upland with boulder fields, bedrock outcrops, and localized glacial features in the form of eskers, drumlinoid hills and fluted moraine (Canada Department of the Environment 1980b,1984b). Marine deposits occupy low-lying sites. South of Wager Bay, the topography is more variable and ranges from rolling to hilly to mountainous. Vegetation is mainly a discontinuous cover of lichens, mosses, heath and willow, with grasses, sedges and mosses on low-lying wet sites.

Importance to Wildlife: The Ford Lake area has been identified as one of the most productive nesting areas in the NWT for peregrine falcons (Canada Department of the Environment 1984b). In 1976 and 1977, Calef and Heard (1979,1980) located 31 peregrine nest sites in a survey area which included the shorelines of Wager Bay, Brown Lake, Ford Lake and the shores of adjacent rivers and lakes. Breeding densities approximated 1 pair per 50 km^2. Since 1977, approximately 20 new peregrine nest sites have been located within the delineated area and in the surrounding area (NWT Wildlife Service unpubl. data). Calef and Heard (1980) stated that the Ford Lake area is suitable for peregrine falcons because of the combination of ideal nesting habitat, in the form of cliffs and rock outcrops, and abundant passerine birds which comprise their primary prey. Peregrines are resident in the Ford Lake area from about mid-May until early September.

Lesser numbers of gyrfalcons, rough-legged hawks and golden eagles also nest on the cliffs and rock outcrops within the delineated area (Calef and Heard 1979, 1980). Wager Bay is an important feeding, denning and summering area for polar bears (see Wager Bay, page 169), and caribou from the Lorillard and Wager herds calve in the vicinity of Ford Lake (see Northeastern Keewatin Caribou Calving Grounds, page 51).

Other Conservation Interests: Parks Canada has expressed interest in the Wager Bay area for the purposes of establishing a national park (Canada Department of the Environment 1984d). In terms of relative priority with other proposed park areas in the NWT, Wager Bay is ranked fifth (Scotter 1985).

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations.

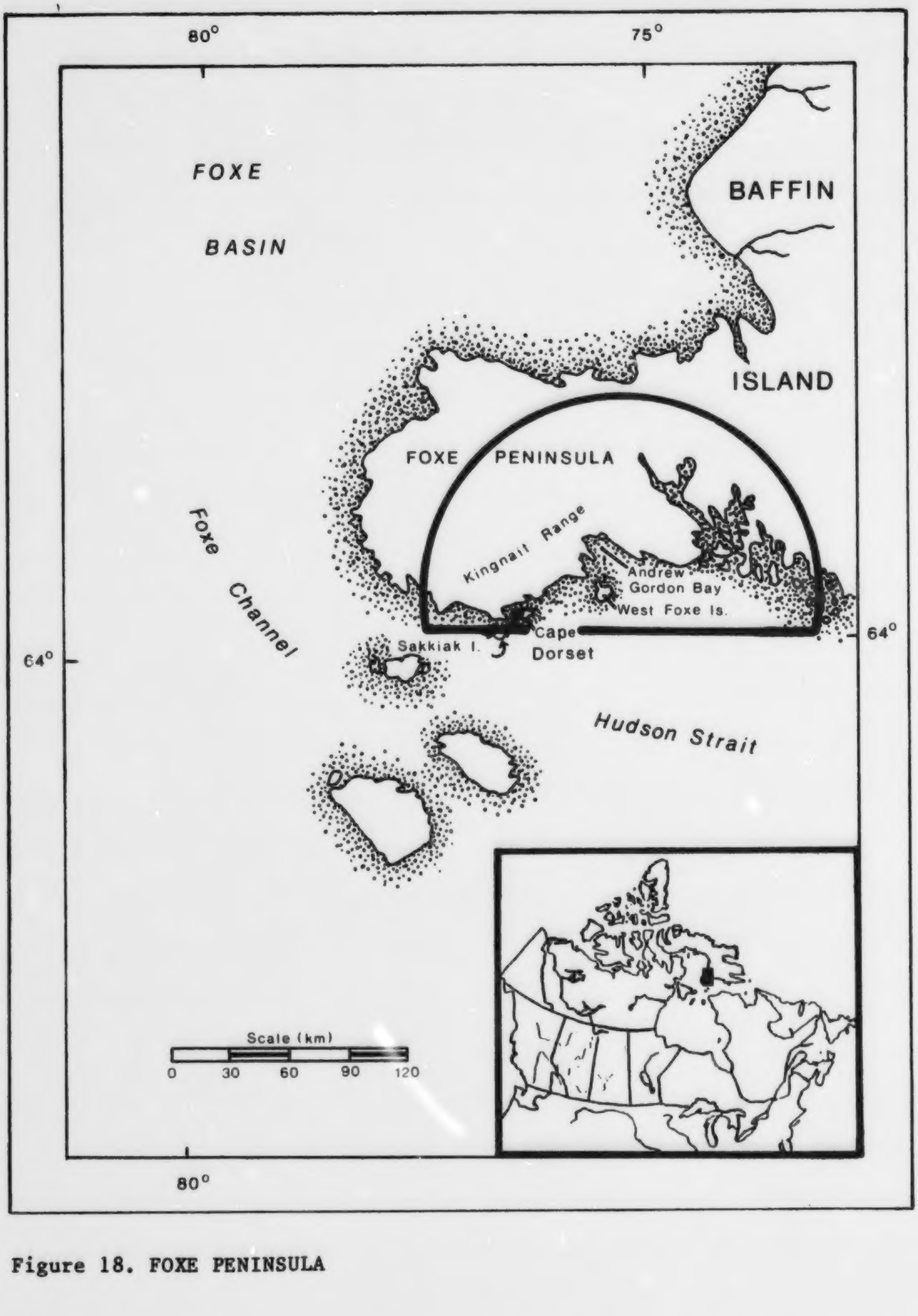

80°
75°
FOXE
BASIN
BAFFIN
ISLAND
FOXE PENINSULA
Kingnait Range
Andrew
Gordon Bay
West Foxe Is.
Cape
Dorset
Sakkiak I.
Foxe Channel
64°
64°
Hudson Strait
Scale (km)
0
30
60
90
120
80°

Figure 18. FOXE PENINSULA

Name: FOXE PENINSULA

Reference Number: 16

Schedule: 2

Location: The approximate geographic centre of the Foxe Peninsula area is located at 64°35'N, 75°30'W; the delineated area encompasses the settlement of Cape Dorset in the District of Franklin.

Size: 15,600 km^2 (excluding area of marine waters)

Boundary: Very general boundaries are drawn around raptor nesting areas (see page 18). Foxe Peninsula supports a relatively high density of nesting gyrfalcons and peregrine falcons, as determined by aerial and ground surveys between 1983 and 1985. Survey coverage of southern Baffin Island has been incomplete. For ground surveys, selection of survey areas was influenced by the distance from settlements and accessibility by snowmobile (Bromley and McLean 1986). Accordingly, important raptor nesting areas often seem to be associated with the presence of communities, but this association is probably a function of survey effort. If surveys were extended over new territory, additional nesting habitats would undoubtedly be discovered.

Natural Setting: The Foxe Peninsula lies within the Frobisher Upland physiographic region, a rugged upland that rises abruptly from Frobisher

Bay to elevations of 900 m asl, then slopes southward into Hudson Strait (Bostock 1970). Foxe Peninsula forms the western end of this upland and elevations are generally lower (less than 200 m asl) except for the Kingnait Range, which rises to 360 m asl. The southern coast of Foxe Peninsula is irregular and is deeply indented by many inlets and bays with numerous offshore islands. The vegetation of southern Baffin Island is characterized by lichens and low shrubs on upper slopes; a mixture of heaths, mosses, grasses, forbs and low shrubs on lowlands and lower slopes; and sedges, rushes, mosses and cotton-grass on poorly drained sites with standing water (Polunin 1948). Southern Baffin Island was surveyed in 1984 as part of the Lands Directorate's Northern Land Use Information Series Program, but the vegetation descriptions for Foxe Peninsula are currently unavailable.

Importance to Wildlife: Foxe Peninsula is an important nesting area for raptors, particularly gyrfalcons and peregrine falcons. Approximately 50 nest sites have been located within the delineated area (Bromley and McLean 1986, NWT Wildlife Service unpubl. data). These sites include those used by ravens, which may play an important role in providing nest sites to gyrfalcons. The nesting season for gyrfalcons begins in early to mid-May; fledging occurs from late July to early August. Peregrine falcons nest later, with egg-laying in mid-June and fledging of young in late August (Bromley and McLean 1986). A preliminary analysis of food habits of gyrfalcons in the eastern Arctic suggests that seabirds (including black guillemots and gulls) are an important part of their diet (Bromley 1985, Bromley and McLean 1986). Two black guillemot colonies have been reported in the vicinity of Cape Dorset (McCormick and Adams 1984), and the southern coastal areas of the Frobisher Upland support large numbers of gulls, eiders and other waterbirds (R. Decker pers. comm.).

Other Conservation Interests: The Cape Dorset Migratory Bird Sanctuary, which includes some islands in Andrew Gordon Bay, the West Foxe Islands and Sakkiak Island, was established in 1957 to protect nesting populations of common eiders (Cooch 1965), and is still recognized as a Key Migratory Bird Terrestrial Habitat Site (McCormick et al. 1984). Parks Canada has expressed interest in the coastal waters of Foxe Peninsula as a natural area worthy of consideration for marine park purposes (Canada Department of the Environment 1984d).

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations. The Cape Dorset Migratory Bird Sanctuary is protected by the Migratory Bird Sanctuary Regulations, pursuant to the Migratory Birds Convention Act.

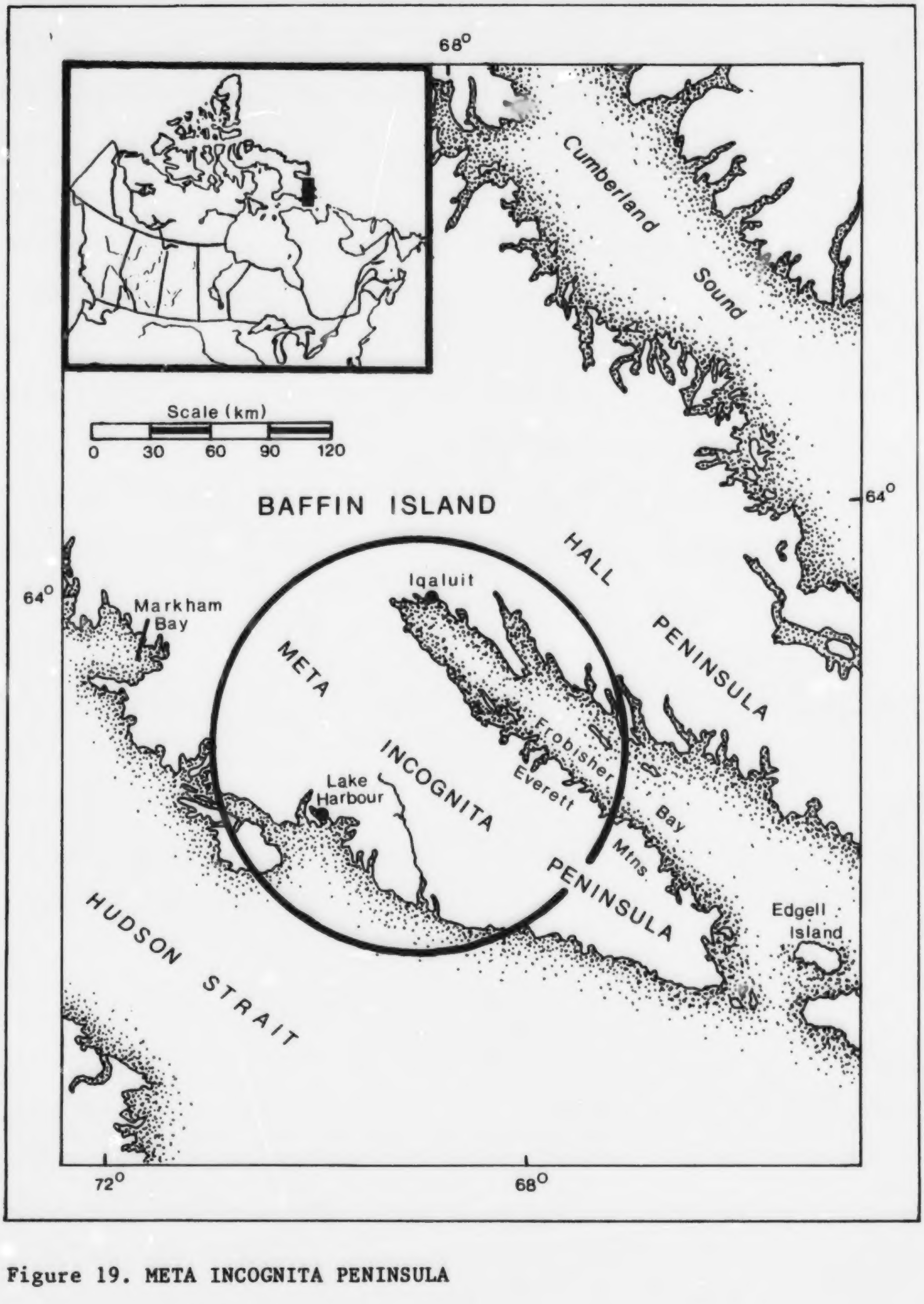

68°
Cumberland Sound
Scale (km)
0
30
60
90
120
BAFFIN ISLAND
64°
HALL PENINSULA
64°
Iqaluit
Markham Bay
META INCOGNITA PENINSULA
Frobisher Bay
Everett Mtns
Lake Harbour
Edgell Island
HUDSON STRAIT
72°
68°

Figure 19. META INCOGNITA PENINSULA

Name: META INCOGNITA PENINSULA

Reference Number: 17

Schedule: 2

Location: The approximate geographic centre of the delineated area is located at 63°05'N, 68°50'W; the delineated area encompasses the settlements of Iqaluit (formerly Frobisher Bay) and Lake Harbour in the District of Franklin.

Size: 28,800 km2 (excluding area of marine waters)

Boundary: Very general boundaries are drawn around raptor nesting areas (see page 18). The delineated area contains a relatively high density of nesting gyrfalcons and peregrine falcons, as determined by aerial and ground surveys between 1983 and 1986. Present knowledge of raptor nesting distributions on southern Baffin Island is limited because survey coverage has been incomplete. For ground surveys, selection of survey areas was influenced by the distance from settlements and accessibility by snowmobile (Bromley and McLean 1986). Accordingly, important raptor nesting areas often seem to be associated with the presence of communities, but this association is probably a function of survey effort. If surveys were extended over new territory, additional nesting habitats would undoubtedly be discovered.

Natural Setting: The Meta Incognita Peninsula area lies within the Frobisher Upland and Hall Upland physiographic regions (Bostock 1970), which are separated from each other by Frobisher Bay and the lowlands associated with the Foxe Plain. Frobisher Upland is a rugged highland that rises abruptly from Frobisher Bay to elevations of 900 m asl, then slopes southward into Hudson Strait. The south-facing surface of this upland is dissected by many rivers and streams which drain the higher elevations of Meta Incognita Peninsula and flow south into Hudson Strait. Hall Upland reaches elevations of 1150 m asl on the northeast side of Frobisher Bay and is also tilted toward the south. The vegetation, as described by Polunin (1948), consists of: a sparse cover of lichens and low-growing shrubs on upper slopes and hill summits; a mixture of heaths, mosses, grasses, forbs and low shrubs in lowlands and on lower slopes; and lush growths of sedges, rushes, mosses and cotton-grass on poorly drained areas with standing water. Southern Baffin Island was surveyed in 1984 as part of the Northern Land Use Information Series program, but the vegetation descriptions for Meta Incognita Peninsula are currently unavailable.

Importance to Wildlife: The delineated area contains important nesting habitat for raptors, particularly gyrfalcons and peregrine falcons. Approximately 100 nest sites have been located within this area (Bromley and McLean 1986, NWT Wildlife Service unpubl. data). For gyrfalcons, nesting begins from early to mid-May with fledging of young occurring from late July to early August. Peregrine falcons nest later; the average date of egg-laying and fledging in 1983 was 19 June and 29

August, respectively (Bromley and McLean 1986). A preliminary analysis of food habits of gyrfalcons in the eastern Arctic suggests that seabirds (including black guillemots and gulls) are an important part of their diet (Bromley and McLean 1986). A large colony of thick-billed murres, black-legged kittiwakes, gulls and black guillemots is located near Edgell Island (McCormick et al. 1984), 130 km southeast of the delineated area, and numerous, smaller colonies of seabirds dot the coastal areas of Meta Incognita and Hall peninsulas (McCormick and Adams 1984). The proximity of these colonies to the rugged topography of southeastern Baffin Island produces ideal nesting conditions for gyrfalcons.

Other Conservation Interests: A small area in the Everett Mountains was proposed as an IBP site (Nettleship and Smith 1975). Parks Canada has expressed interest in Frobisher Bay as a natural area worthy of consideration for marine park purposes (Canada Department of the Environment 1984d).

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations.

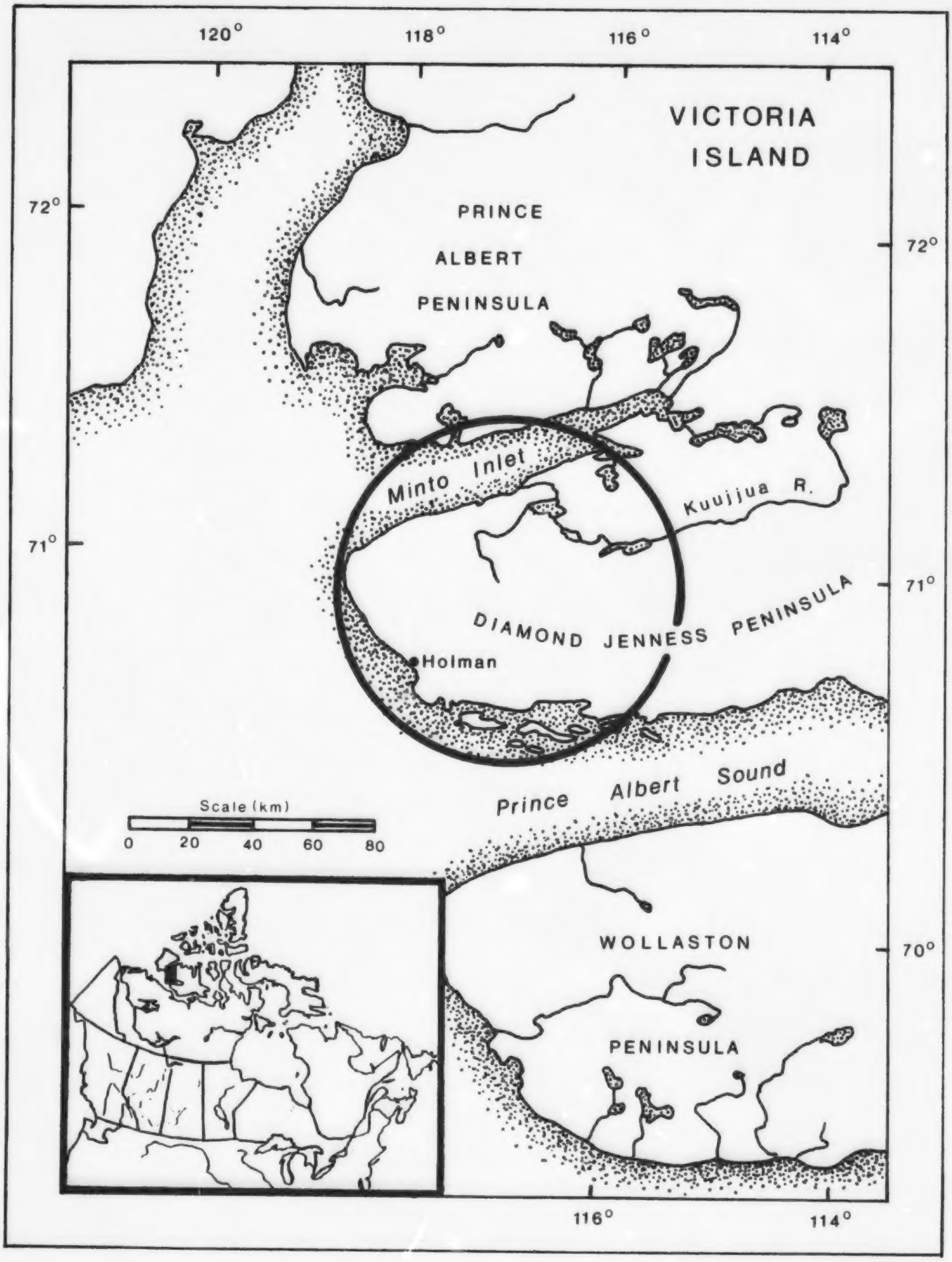

120°
118°
116°
114°
VICTORIA ISLAND
72°
PRINCE ALBERT PENINSULA
72°
Minto Inlet
Kuujjua R.
71°
71°
DIAMOND JENNESS PENINSULA
Holman
Prince Albert Sound
Scale (km)
0
20
40
60
80
WOLLASTON PENINSULA
70°
116°
114°

Figure 20. MINTO INLET

Name: MINTO INLET

Reference Number: 18

Schedule: 2

Location: The approximate geographic centre of the Minto Inlet area is located at 70°55'N, 116°50'W; the delineated area encompasses the settlement of Holman in the District of Franklin.

Size: 7,600 km2 (excluding area of marine waters)

Boundary: Very general boundaries are drawn around raptor nesting areas (see page 18). The delineated area supports a relatively high density of nesting peregrine falcons, as determined by aerial and ground surveys in 1980 (Allen 1982, McLaren and Alliston 1981) and aerial surveys in 1984 (Bromley and McLean 1986). Of all the areas of western Victoria Island surveyed in 1980, the Minto Inlet - Kuujjua River area was recognized as having the greatest abundance of potential nesting sites for peregrine falcons.

Natural Setting: The Minto Inlet area lies within the Shaler Mountains physiographic region (Bostock 1970). The Shaler Mountains bisect Victoria Island along a northeast - southwest syncline, forming a hilly to mountainous axis with elevations reaching 760 m asl (Canada Department of the Environment 1983b). Typically the hills form cuestas and are capped by flat-lying volcanic rocks (Bostock 1970). Frost-fractured bedrock and outcrops are common and, in some areas, the topography is very rugged with steep-walled canyons or escarpments several hundred metres in height (Canada Department of the Environment 1982b,1983b). A sparse to discontinuous cover of lichens and herbs dominates the rocky uplands, but in poorly drained depressions and along drainage channels a continuous cover of sedges, mosses, grasses and willow is predominant. The Kuujjua River traverses the northeastern part of the delineated area. Vegetation in the Minto Inlet - Kuujjua River area is remarkably diverse and ranges from barren polar desert on rocky, upland sites to stands of willow 6 m in height along river valleys (McLaren and Alliston 1981).

Importance to Wildlife: The western part of Diamond Jenness Peninsula is an important nesting area for peregrine falcons (Falco peregrinus tundrius), which is classified as a threatened subspecies by the Committee on the Status of Endangered Wildlife in Canada (Cook and Muir 1984). Approximately 25 nest sites have been located within the delineated area (Allen 1982, McLaren and Alliston 1981, NWT Wildlife Service unpubl. data). During the most recent survey, which was conducted in 1984, 24 active peregrine territories were recognized (Bromley and McLean 1986). In the Kitikmeot Region, the nesting season for peregrine falcons generally occurs from early June (egg-laying) to mid-August (fledging of young) (Bromley and McLean 1986). The Minto Inlet area provides favourable nesting conditions for peregrine falcons owing to an abundance of suitable nest sites in proximity to well vegetated, lowland habitats with abundant prey. Allen (1982) reported that the highest densities of nesting birds, primarily waterbirds and shorebirds, occurred in lowlands with continuous vegetative cover and numerous ponds, including the coastal lowlands of Prince Albert Sound. In 1980 McLaren and Alliston (1981) located 91 rough-legged hawk nests in the Minto Inlet - Kuujjua River area, and concluded that this area is likely one of the most important areas on Victoria Island for this species.

The southern part of Prince Albert Peninsula, north of Minto Inlet, is a probable calving area for Peary caribou (see Prince Albert Peninsula, page 55).

Other Conservation Interests: The northeastern part of the delineated area overlaps with a proposed IBP site (Nettleship and Smith 1975).

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations.

MOOSE

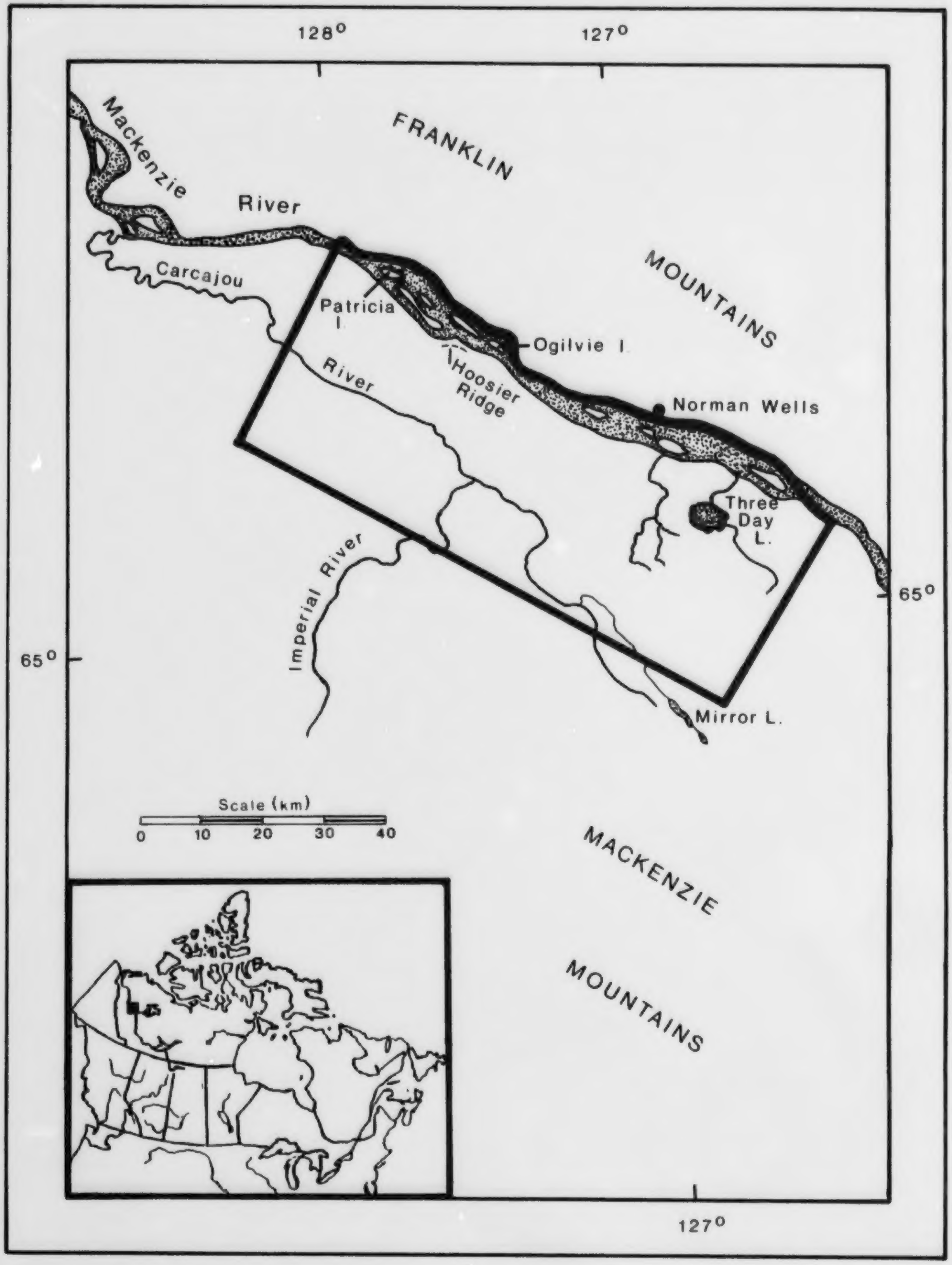

128°
127°
FRANKLIN
MOUNTAINS
Mackenzie
River
Carcajou
River
Patricia I.
Hoosier Ridge
Ogilvie I.
Norman Wells
Three Day L.
Imperial River
Mirror L.
65°
65°
Scale (km)
0
10
20
30
40
MACKENZIE
MOUNTAINS
127°

Figure 21. CARCAJOU RIVER

Name: CARCAJOU RIVER

Reference Number: 19

Schedule: 2

Location: The approximate geographic centre of the delineated area is located at 65°15'N, 127°20'W, 25 km southwest of Norman Wells in the District of Mackenzie.

Size: 3,100 km2

Boundary: Population surveys of moose near Norman Wells in November 1984 revealed a number of areas where moose were concentrated, including the Carcajou River and its tributaries, Mirror Lake, Three Day Lake, Hoosier Ridge, and the islands in Mackenzie River between Ogilvie Island and Patricia Island (Jingfors et al. In prep.). The boundary of the delineated area was drawn to enclose these high density areas.

Natural Setting: The Carcajou River area lies within the Mackenzie Plain physiographic region, a broad, rolling plain lying between the Mackenzie and Franklin mountains (Bostock 1970). The Mackenzie River flows north along the eastern side of the Plain. Several streams and rivers whose headwaters lie in the Mackenzie Mountains to the west traverse the Mackenzie Plain before joining the Mackenzie River. Fluvial terraces accompany most of the larger streams and rivers, while glacio-lacustrine sediments with organic deposits dominate the Plain (Prescott et al. 1973). Vegetation of the area is characterized by white spruce and balsam poplar on well drained uplands, and by black spruce and scattered tamarack on poorly drained sites and in areas of muskeg. Along drainages, frequent flooding and ice scouring have maintained the vegetation in an early successional stage; willow, alder and red osier dogwood are common. Forest fires play an important role in maintaining early successional stages of growth on upland sites (Canada Department of the Environment 1973, Kelsall et al. 1977). Important deciduous species of post-fire communities include trembling aspen, white birch, willow, buffalo berry and bear berry.

Importance to Wildlife: The Carcajou River area provides important winter habitat for moose. Riparian habitats along the Mackenzie, Carcajou and Imperial rivers were rated as Class 1 habitats for moose by Prescott et al. (1977). Moose are concentrated into these relatively narrow bands of habitat during the winter months (November to March). In November 1984, Jingfors et al. (In prep.) estimated a population of 465 moose in the Carcajou River area. The riparian habitats support many important browse species, including red osier dogwood, willow, alder and young balsam poplar. Frequent flooding and ice action in the spring keep this vegetation in a successional stage favourable to moose (Prescott et al. 1977). Wetlands and shoreline habitats of lakes, particularly Mirror Lake and Three Day Lake, also provide good feeding areas for moose in winter. A large upland area south of Hoosier Ridge is also used by moose in winter, owing to an "old burn" (Prescott et al. 1977) that regenerated in deciduous shrub communities. The optimal successional stages for moose in the NWT have not been documented, but are likely to occur during the first 30 years following burning (Forest Fire Review Panel 1980, Kelsall et al. 1977). Ongoing studies of radio-collared moose in the Norman Wells area will provide additional information on their seasonal movements and distributions (G. Stenhouse pers. comm.).

The islands in the Mackenzie River near Norman Wells provide an important staging area for migrating waterfowl, particularly lesser snow geese, during the month of May (McCormick et al. 1984).

Other Conservation Interests: A proposed IBP site centred at Mirror Lake overlaps part of the Carcajou River area (Beckel 1975). The islands in the Mackenzie River between the Redstone River and Patricia Island have been identified as a Key Migratory Bird Terrestrial Habitat Site (McCormick et al. 1984). An area around the Carcajou River has also been identified by Parks Canada as a preliminary area of interest for national park purposes (Canada Department of the Environment 1984d).

Protective Status: Land-use activities are regulated under the *Territorial Lands Act* and Territorial Land Use Regulations.

MUSKOX

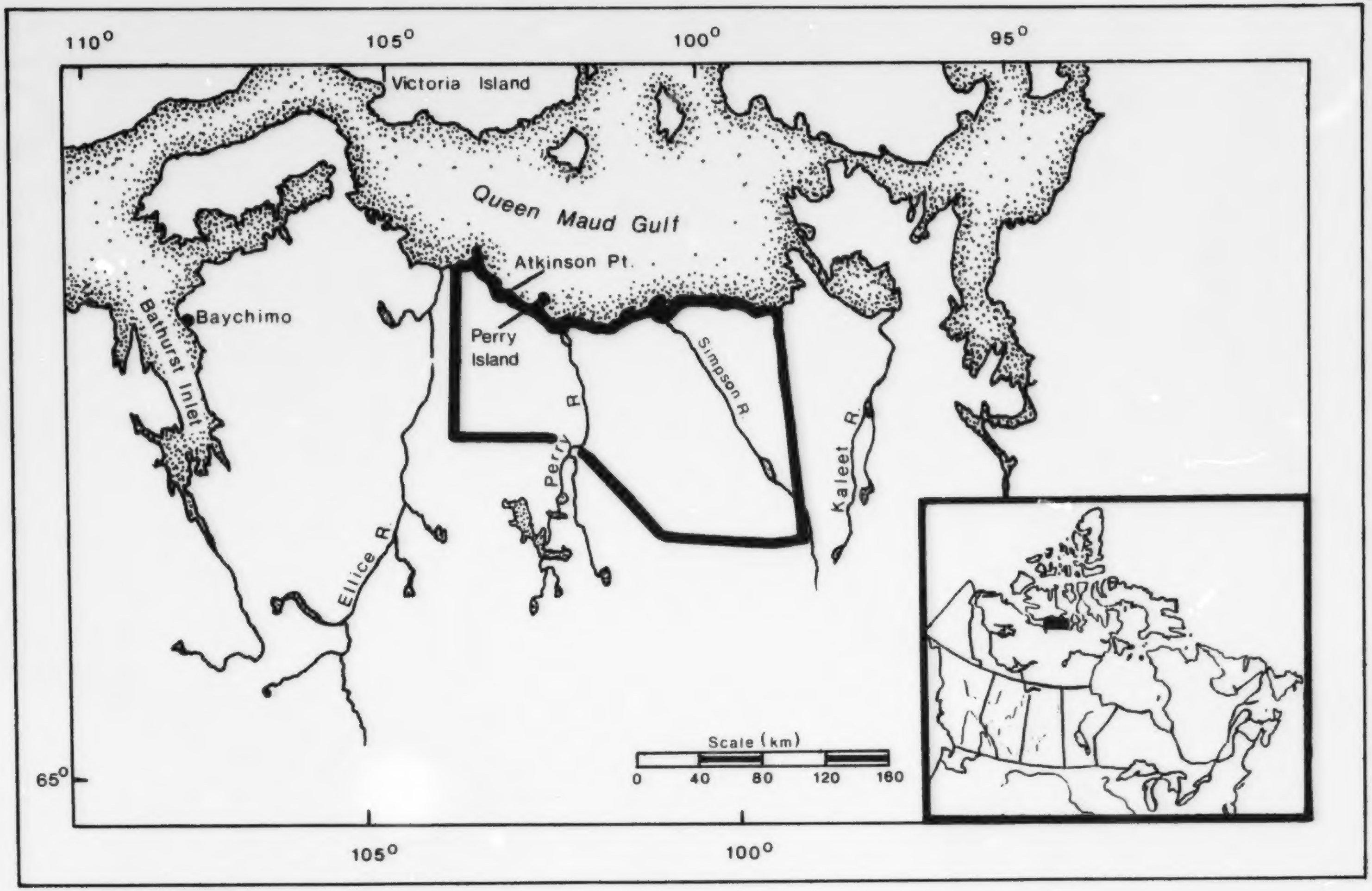

110°
105°
100°
95°
Victoria Island
Queen Maud Gulf
Atkinson Pt.
Perry Island
Baychimo
Bathurst Inlet
Simpson R.
Perry R.
Kaleet R.
Ellice R.
Scale (km)
0
40
80
120
160
65°
105°
100°

Figure 22. BACK LOWLAND

Name: BACK LOWLAND

Reference Number: 20

Schedule: 1

Location: The approximate geographic centre of the Back Lowland area is located at 67°20'N, 101°30'W, 280 km east of the settlement of Baychimo.

Size: 25,500 km^2

Boundary: The boundary of the delineated area encompasses the major areas of muskox concentrations as determined by aerial surveys in 1979 and 1982. The 1982 survey results demonstrated that muskox densities were highest within 50 km of the Queen Maud Gulf coastline, with other major concentrations along the drainages south of Atkinson Point and Perry Island, and on the plains near the headwaters of the Simpson and Perry rivers (Gunn and Case 1984). Recent population estimates indicate increasing numbers of muskoxen on the Back Lowland with an accompanying expansion in their distributional range, particularly to the east (Gunn et al. 1984). In 1982, the eastern limit of muskox observations was near the mouth of Kaleet River. If expansion of their range continues, major concentrations of muskox beyond the current boundary may be identified in the future.

Natural Setting: The delineated area lies within the Back Lowland physiographic region (Bostock 1970), which is underlain by granitic bedrock characteristic of the Precambrian Shield. The topography is generally low-lying although some upland areas are 300 m asl. Eskers, drumlins, outwash plains, end moraines and ground moraines are typical glacial features (Fleck and Gunn 1982). Marine silts and sands form a mantle over the surface near the coast, and occupy low-lying depressions among the glacial features and bedrock outcrops. Tundra ponds and small lakes are scattered throughout the area, with drainage to the north into Queen Maud Gulf. Marsh tundra, lichen-heath and dwarf shrub-heath are the dominant plant associations (Nettleship and Smith 1975). In coastal areas, sedge tussocks form a continuous ground cover over the marine sediments (Gunn et al. 1984).

Importance to Wildlife: The most recent population estimate of 8,500 muskoxen was obtained from a systematic aerial survey in July 1982 (Gunn and Case 1984). This population has increased substantially since the early 1960s when the population probably comprised no more than 100 animals (Gunn et al. 1984). Such rapid population growth is partly due to recolonization of the Queen Maud Gulf area from adjacent regions, either Bathurst Inlet to the west or the Thelon Game Sanctuary to the south (Gunn et al. 1984, Tener 1958). The delineated area represents year-round range for muskoxen. In summer, they are usually distributed along river valleys and coastal lowlands where they feed in the wet sedge meadows. In winter, they select high ground to take advantage of foraging areas that are wind-blown free of snow (Boxer 1980, Kelsall 1984).

The western part of the delineated area overlaps with the calving ground of the Bathurst Caribou Herd (see Bathurst Caribou Calving Ground, page 27). An area near the Simpson River was identified in 1986 as a calving area for caribou, probably the Adelaide Peninsula Herd (A. Gunn pers. comm.).

The northern half of the Back Lowland is an important nesting and moulting area for waterfowl, particularly Ross' geese (45,000 pairs) and lesser snow geese (53,000 pairs), but also for Canada geese, brant, white-fronted geese and tundra swans (McCormick et al. 1984).

Other Conservation Interests: The Back Lowland area is situated within the Queen Maud Gulf Migratory Bird Sanctuary (McCormick et al. 1984). The sanctuary also has been designated as a Wetland of International Importance (Canada Department of the Environment 1982e, UNESCO 1971), and was proposed as an IBP site (Nettleship and Smith 1975).

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations and the Migratory Bird Sanctuary Regulations pursuant to the Migratory Birds Convention Act.

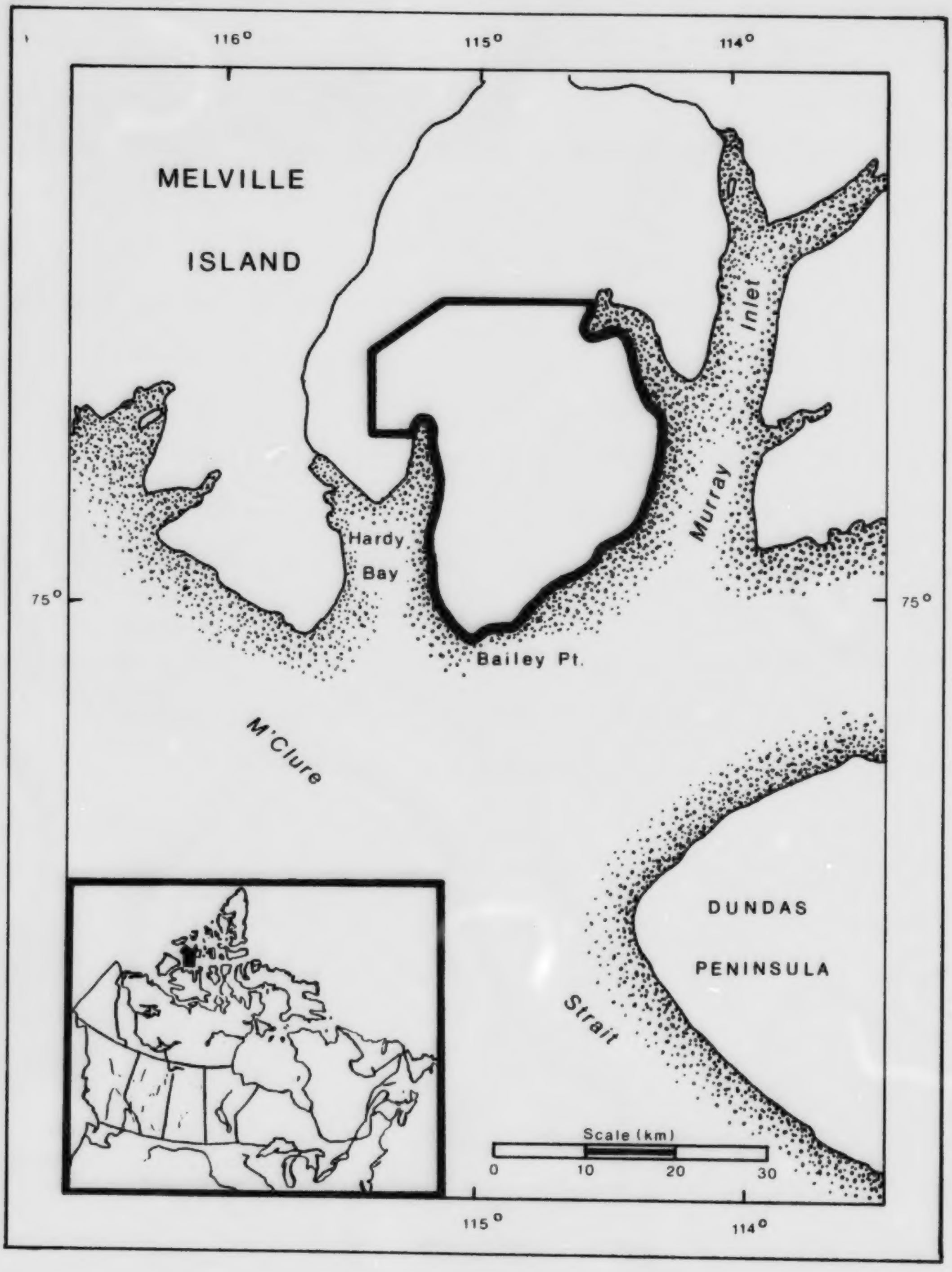

116°
115°
114°
MELVILLE
ISLAND
Inlet
Murray
Hardy
Bay
Bailey Pt.
75°
75°
M'Clure
Strait
DUNDAS
PENINSULA
Scale (km)
0
10
20
30
115°
114°

Figure 23. BAILEY POINT

Name: BAILEY POINT

Reference Number: 21

Schedule: 1

Location: The approximate geographic centre of the Bailey Point area is located at 75°10'N, 114°45'W. The nearest community is Sachs Harbour on Banks Island, 460 km southwest of Bailey Point.

Size: 740 km^2

Boundary: The boundary of the delineated area encompasses the major areas of muskox concentrations as determined by aerial surveys from 1972 to 1983. Muskox numbers were consistently high throughout this period and ranged from a minimum of 124 in 1983 to a maximum of 698 in 1976, with an average of 394 (based on 16 surveys). A combination of climatic and geographic factors produces the favourable environmental conditions for muskoxen at Bailey Point, including low annual precipitation, lack of rain and snow melt during winter, protection from prevailing winds by interior highlands, and abundance of productive lowlands and fertile stream valleys (Thomas et al. 1981).

Natural Setting: The Bailey Point area lies within the Parry Plateau physiographic region, an uplifted plateau dissected by wide valleys, rugged ravines and fiord-like bays and straits (Bostock 1970). On

Melville Island, elevations average 300 m asl. The peninsula that terminates at Bailey Point consists mainly of an elevated plateau that rises to 720 m asl in the interior, surrounded by a low, undulating, coastal plain. In a few places, the plain is interrupted by high coastal cliffs. The inland area is dissected by numerous, steep-sided valleys and ravines. The coastal lowlands consist of two dominant vegetation types. The clay barrens type is common on elevated ridges and comprises a mixture of willow and mountain avens with much bare ground. The clay-moss slope type is similar in species composition, but is characterized by a greater percentage of plant cover (Parker and Ross 1976). The dominant vegetation types on the inland plateau are the polar desert, characterized by a sparse cover of grasses, forbs and lichens, and the moss-clay plateau which supports mosses, grasses and forbs. Extensive sedge meadows are associated with lower slopes at the base of the plateau, as well as with valley bottoms and coastal lowlands (Canada Department of the Environment 1982c).

Importance to Wildlife: The Bailey Point area is considered to be among the best habitats for muskoxen in the Canadian High Arctic. Muskoxen were first noted in this area in 1961 when the Canadian Wildlife Service conducted an extensive survey of the Queen Elizabeth Islands (Tener 1963). The delineated area is considered to be a refugium for muskoxen during periods of extreme climatic conditions. Muskoxen at Bailey Point were unaffected by the severe winter of 1973-74, when herds on adjacent parts of Melville Island and on Bathurst Island were decimated (Miller et al. 1977). Most muskox ranges in the Canadian Arctic Archipelago are subject to occasional icing and deep, compacted snow (Thomas et al. 1981), conditions which can cause major reductions in populations and suspended reproductive activity (Gray 1973). As a refugium, Bailey Point serves as an important source of muskoxen for restocking other areas in the western Queen Elizabeth Islands where populations have declined or disappeared. Emigration of muskoxen from Bailey Point occurred in 1977-78, when 200 - 300 animals moved elsewhere, possibly to Dundas Peninsula on eastern Melville Island (Thomas et al. 1981). For feeding, muskoxen prefer the well-vegetated sedge meadows which are often near or along the coast, or in lowland areas below 150 m in elevation (Canada Department of the Environment 1982c). In winter, exposed vegetation on wind-swept slopes and ridges is selected. In spring, south-facing slopes are important feeding sites because of early availability of forage due to early snow melt.

Other Conservation Interests: The delineated area overlaps a proposed IBP site (Nettleship and Smith 1975).

Protective Status: Land-use activities are regulated under the *Territorial Lands Act* and Territorial Land Use Regulations.

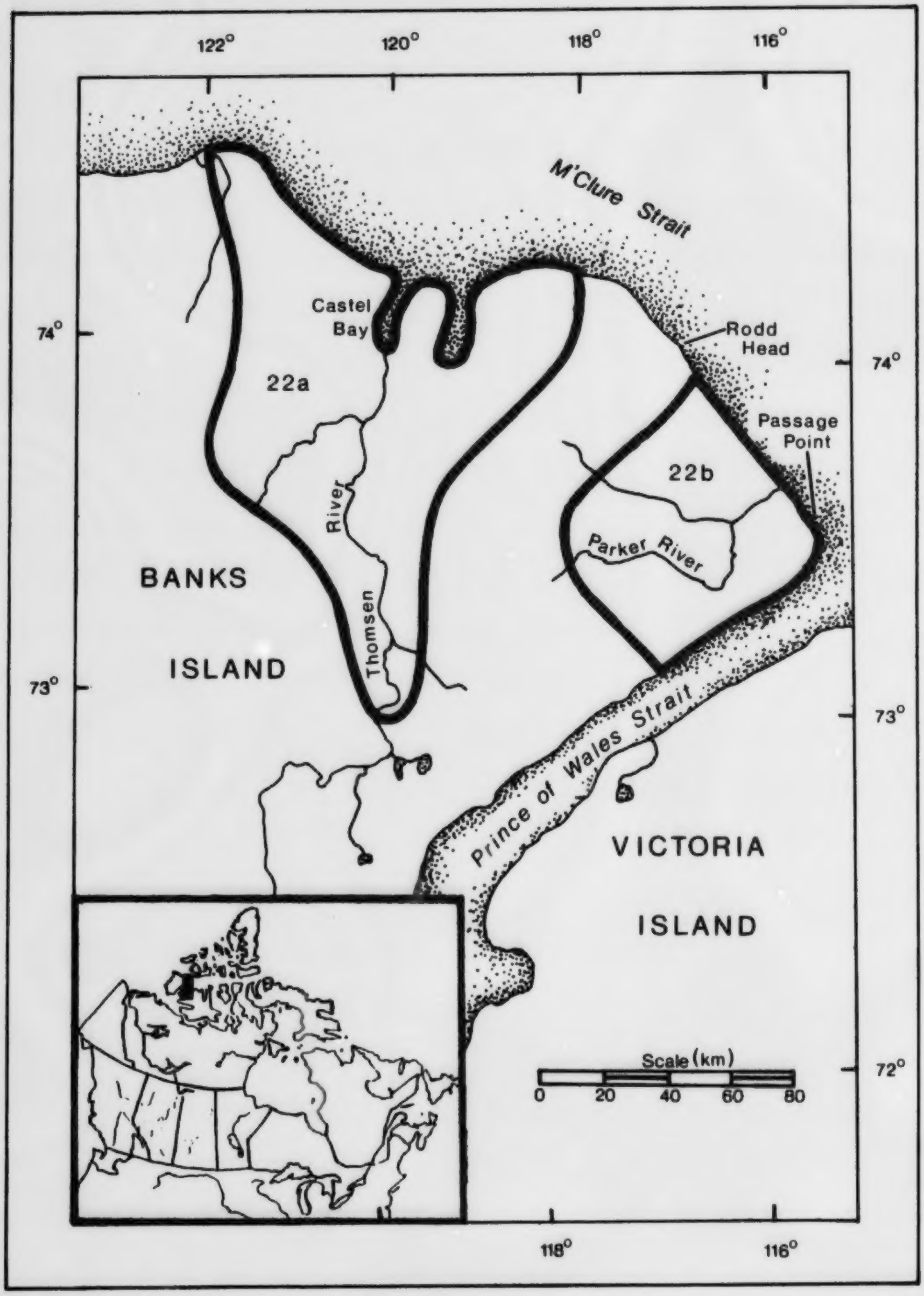

122°
120°
118°
116°
74°
73°
72°
M'Clure Strait
Castel Bay
Rodd Head
Passage Point
22a
22b
Thomsen River
Parker River
BANKS ISLAND
Prince of Wales Strait
VICTORIA ISLAND
Scale (km)
0
20
40
60
80

Figure 24. THOMSEN AND PARKER RIVERS

Name: THOMSEN AND PARKER RIVERS

Reference Number: 22

Schedule: 1

Location: Banks Island muskoxen are generally concentrated in two areas: a large area centred around the Thomsen River (22a) and a smaller area surrounding the Parker River (22b). The approximate geographic centre of these areas is 73°35'N, 118°50'W, 275 km northeast of the settlement of Sachs Harbour.

Size: Thomsen River area - 10,000 km^2; Parker River area - 4,800 km^2; (Total - 14,800 km^2)

Boundary: The boundaries of the delineated areas are based on known concentration areas for muskoxen, as determined from aerial surveys, and on a preliminary assessment of muskox habitat on northern Banks Island. The most recent aerial survey by McLean et al. (1986) in 1985 confirmed the results of earlier surveys (Latour 1985, Urquhart 1973, Vincent and Gunn 1981a,b) which indicated high densities of muskoxen in the Thomsen and Parker river drainages. Zoltai et al. (1980) concluded that the delineated areas were among the best year-round habitats for muskoxen on Banks Island.

Natural Setting: The delineated areas lie within the Victoria Lowland physiographic region, a smooth, undulating lowland underlain by flat-lying sedimentary strata and covered by a variety of glacial deposits (Bostock 1970). The Thomsen River area is characterized by gently rolling hills and intervening plains, generally less than 150 m asl (Zoltai et al. 1980). In contrast, the Parker River drains an elevated plateau which is deeply incised by streams and gorges along its edges (Canada Department of Fisheries and the Environment 1977b,c). Northwest of the Thomsen River, the Castel Bay uplands provide moderate to high relief (350 m asl) and are characterized by strongly eroded, badland topography. The vegetation is dominated by polar semi-desert and desert communities, with local areas of arctic tundra and wetland meadow (Zoltai et al. 1980). The wetland communities support lush growths of sedges and mosses, and constitute important foraging habitats in summer.

Importance to Wildlife: The delineated areas provide important year-round range for muskoxen. The most recent survey (1985) of Banks Island estimated a population of 25,700 muskoxen, with major concentrations in the Thomsen River area (approximately 9,200 animals) and Parker River area (approximately 2,800 animals) (McLean et al. 1986). Earlier surveys in 1971, 1972, 1977, 1979, 1980 and 1982 also demonstrated that muskoxen consistently use the major river valleys of northeastern Banks Island (Kevan 1972, Latour 1985, Russell 1977, Urquhart 1973, Vincent and Gunn 1981a,b).

The Thomsen River valley is an important moulting area for lesser snow geese from early July to mid-August, and Castel Bay and the lower Thomsen River provide habitat for moulting brant (McCormick et al. 1984).

The coastal area between Passage Point and Rodd Head is considered to be a calving area for Peary caribou (Urquhart 1973). The most recent (1985) population estimate for caribou on Banks Island is 4,900 animals (McLean et al. 1986).

Other Conservation Interests: The Banks Island Bird Sanctuary No. 2 encompasses 642 km2 along the Thomsen River, and includes the Thomsen River Key Migratory Bird Terrestrial Habitat Site (McCormick et al. 1984). Parks Canada has selected northern Banks Island as a proposed site for a national park reserve (Canada Department of the Environment 1984d). This site overlaps the Thomsen River area as does a proposed IBP site which is located west of the Thomsen River (Nettleship and Smith 1975).

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations, and for that portion of the Thomsen River area within the migratory bird sanctuary, the Migratory Bird Sanctuary Regulations pursuant to the Migratory Birds Convention Act.

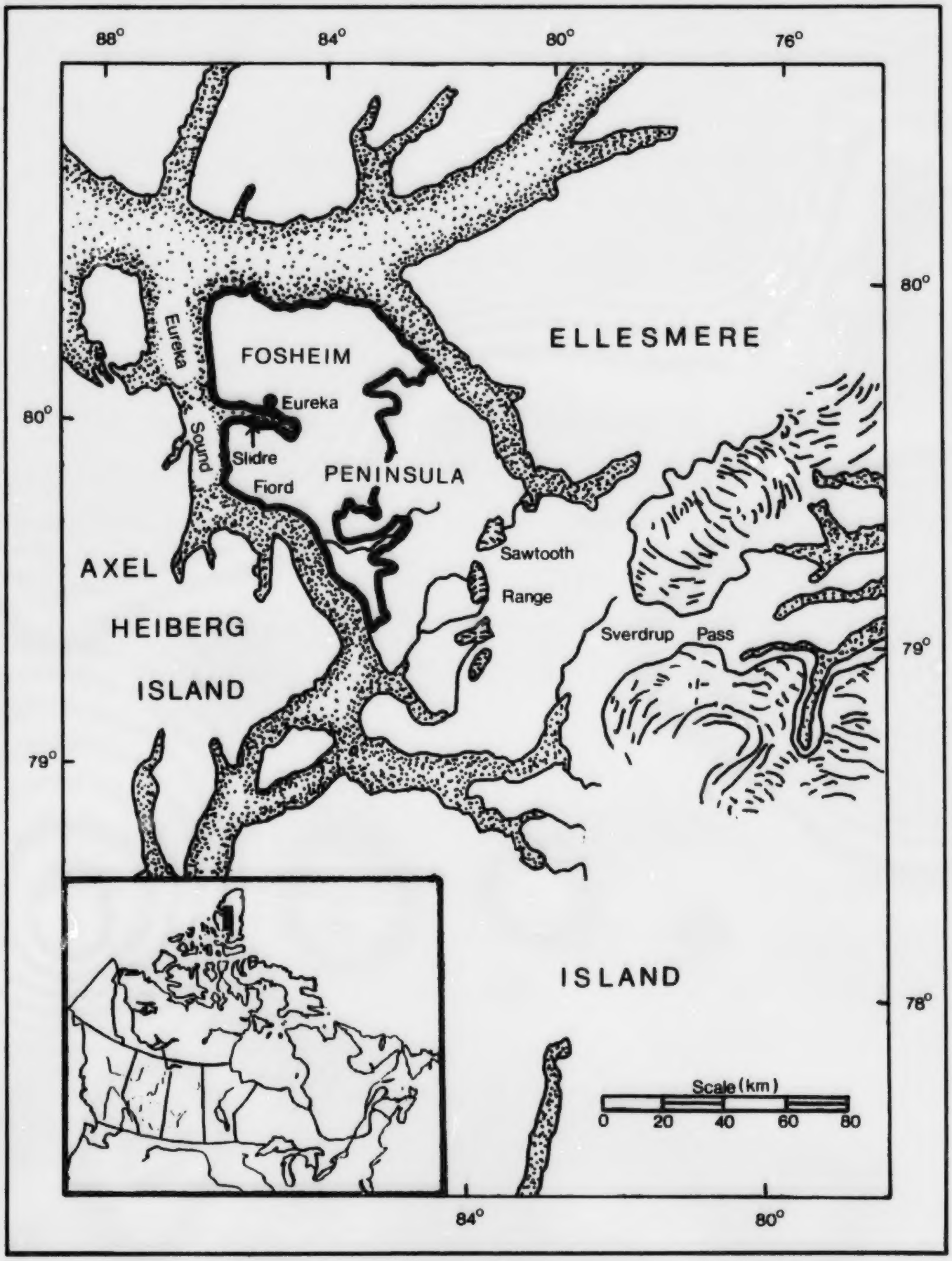

88°
84°
80°
76°
80°
79°
78°
80°
79°
84°
80°
Eureka
Sound
FOSHEIM
Eureka
Slidre
Fiord
PENINSULA
ELLESMERE
Sawtooth
Range
Sverdrup Pass
AXEL
HEIBERG
ISLAND
ISLAND
Scale (km)
0
20
40
60
80

Figure 25. FOSHEIM PENINSULA

Name: FOSHEIM PENINSULA

Reference Number: 23

Schedule: 2

Location: The approximate geographic centre of the Fosheim Peninsula area on Ellesmere Island is located at 80°00'N, 84°50'W, 400 km north of the settlement of Grise Fiord, and encompasses the weather station at Eureka.

Size: 3,600 km2

Boundary: Muskoxen at Fosheim Peninsula have not been surveyed since 1961; therefore, the boundary is preliminary and is subject to change pending further study of muskox distributions on Ellesmere Island. Studies elsewhere have demonstrated the importance of coastal and interior lowlands as muskox habitat. Accordingly, the boundary of the Fosheim Peninsula area was drawn to approximate the 200 m contour line.

Natural Setting: The Fosheim Peninsula area lies within the Eureka Upland physiographic region, a rolling and ridged surface controlled by underlying folded strata (Bostock 1970). There are extensive areas of low, dissected plateaus and gently rolling uplands developed on soft sandstone and shale. Elevations are generally less than 900 m asl. Small, permanent icecaps top the higher peaks of the Sawtooth Range and other mountains to the southeast. The Fosheim Peninsula displays a high diversity of plants and animals for 80°N latitude and is one of the richest biological sites in the High Arctic (Nettleship and Smith 1975). Plant communities vary from extensive barrens with a sparse cover of willow and saxifrage on uplands to dense stands of cotton-grass, sedges and mosses in poorly drained wetlands (Lambert 1973, Nettleship and Smith 1975).

Importance to Wildlife: The current status of muskoxen on Fosheim Peninsula is unknown. The most recent observations in 1960 and 1961 produced counts of 312 and 227 muskoxen, respectively (Tener 1960,1963). Bruggeman (1953,1954) estimated that the population of muskoxen on Fosheim Peninsula was 250 - 300 animals in 1953-54. Tener (1951) counted 131 muskoxen in the vicinity of Slidre Fiord in 1951, and summarized earlier observations by other researchers for various parts of the peninsula: 150 muskoxen in 1947, 163 in 1948, and 413 in 1950. In 1983, Henry et al. (1986) observed 115 muskoxen in the Sverdrup Pass area, and suggested that muskoxen probably migrate between the Fosheim Peninsula and east-central lowlands of Ellesmere Island via Sverdrup Pass. Tener (1963) reported that muskoxen were generally found in well-vegetated river valleys or in flat areas with ponds and meadows. Additional studies are necessary in order to determine the current importance of the Fosheim Peninsula in relation to other muskox habitat on Ellesmere Island. Thomas et al. (1981) considered the Fosheim Peninsula to be an arctic refugium for muskoxen.

The lowland habitats of the Fosheim Peninsula support a nesting population of greater snow geese (McCormick and Adams 1984). The Fosheim Peninsula is also known for its large numbers of arctic hares during peak reproductive years (Nettleship and Smith 1975).

Other Conservation Interests: A small part (685 km2) of the Fosheim Peninsula north of Slidre Fiord was nominated as an IBP site (Nettleship and Smith 1975).

Protective Status: Land-use activities are regulated under the *Territorial Lands Act* and Territorial Land Use Regulations.

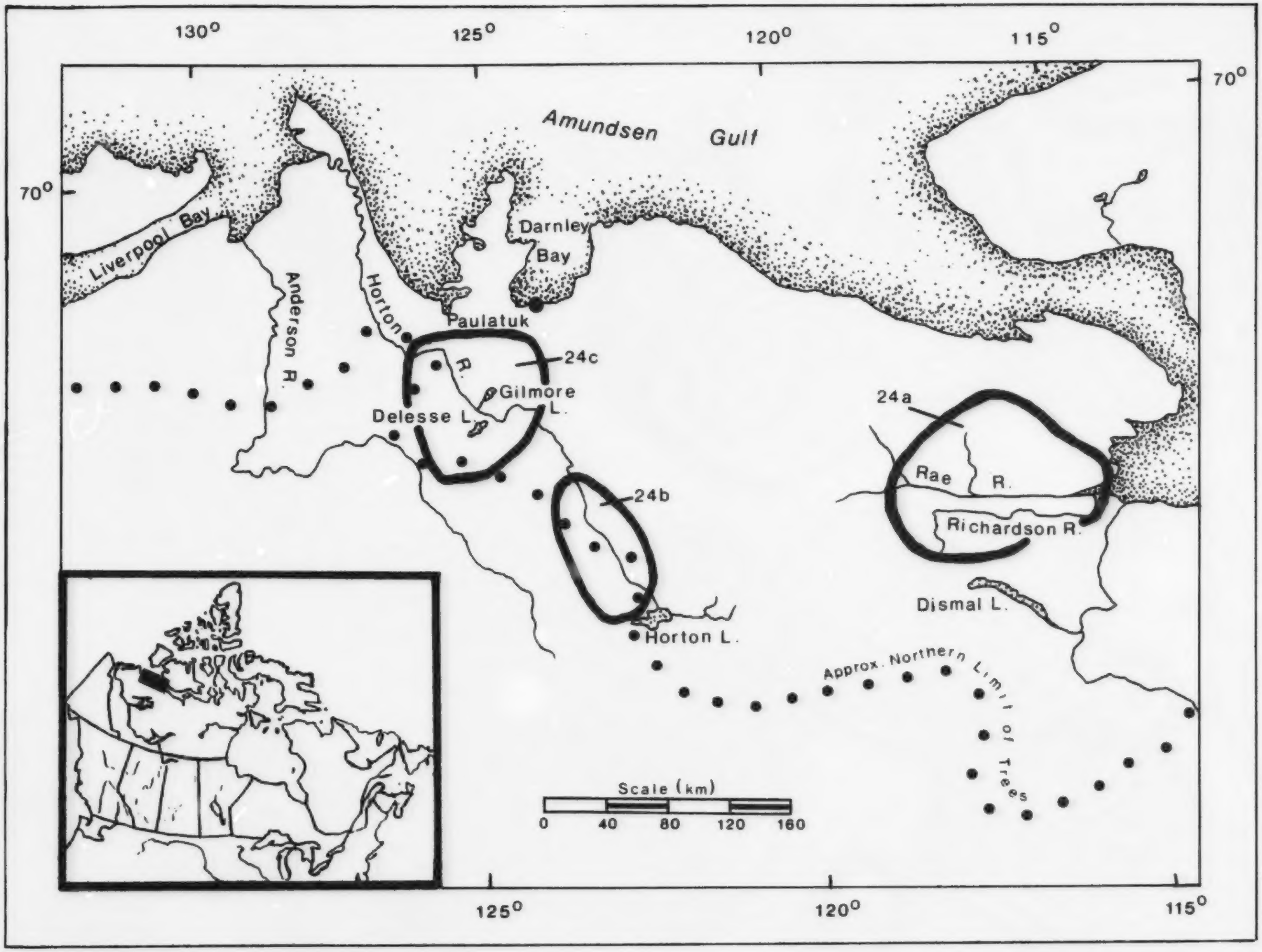

130°
125°
120°
115°
70°
70°
Amundsen Gulf
Liverpool Bay
Darnley Bay
Paulatuk
Horton R.
Anderson R.
Delesse L.
Gilmore L.
24c
24b
24a
Horton L.
Rae R.
Richardson R.
Dismal L.
Approx. Northern Limit of Trees
Scale (km)
0
40
80
120
160
125°
120°
115°

Figure 26. HORTON PLAIN

Name: HORTON PLAIN

Reference Number: 24

Schedule: 2

Location: Muskoxen that inhabit the Horton Plain are generally concentrated in three areas: near the headwaters of the Rae and Richardson rivers (24a), northwest of Horton Lake (24b), and in the Gilmore and Delesse lakes area (24c). The approximate geographic centre of these areas is 68°20'N, 121°30'W, 150 km southeast of the settlement of Paulatuk.

Size: Rae and Richardson rivers - 4,800 km2; Horton Lake area - 4,800 km2; Gilmore and Delesse lakes area - 5,000 km2; (Total - 14,600 km2)

Boundary: The boundaries of the concentration areas are preliminary because they are based on limited data. They are derived from the distributions of muskoxen from surveys conducted in 1974, 1980-81 and 1983 (Carruthers and Jakimchuk 1981, Case and Poole 1985, Spencer 1980). Following a complete ban on muskox hunting in 1917, muskox populations are now re-occupying former ranges, including the area north of Great Bear Lake. Historically, muskoxen were abundant in the Dismal Lakes area, along the arctic coast between Liverpool and Darnley bays, and along the upper reaches of the Anderson and Horton rivers (Kelsall et al. 1971). If the present trend of increasing muskox populations continues on the mainland, further expansion of their range is likely and new concentration areas may be identified on the Horton Plain in subsequent surveys.

Natural Setting: The muskox concentration areas north of Great Bear Lake lie within the Horton Plan and Anderson Plain physiographic regions, except for the southern portion of the Rae and Richardson rivers area which is part of the Coronation Hills (Bostock 1970). The Anderson Plain is covered by glacial till and outwash, and is characterized by an undulating topography which rises inland to elevations of 250 - 300 m asl. Higher elevations are rocky, and several run-off channels wind across the plain. The Horton Plain is generally higher (360 - 600 m asl), with extensive areas of exposed bedrock, particularly on the western part of the plain. In the north, the underlying bedrock is folded and faulted giving rise to a rolling surface of low scarps and scattered mesas (Bostock 1970). The Horton and Anderson plains drain directly into the Arctic Ocean. The Coronation Hills are part of the Precambrian Shield and are formed of northward dipping sediments intruded by sills and dikes. The hills and ridges rise more than 250 m asl. Vegetation is variable, ranging from open woodlands of black spruce, tamarack, white birch and balsam poplar south and west of the tree line, to desert-like shrubland and lichen tundra in the northeast (Canada Department of Fisheries and the Environment 1977d,e).

Importance to Wildlife: The delineated areas provide important year-round range for muskoxen. In March 1983, a population estimate of 3,300 muskoxen was obtained for the area bounded on the north by the arctic coastline, on the east by the Coppermine River, on the south by 67°N and on the west by 127°W (Case and Poole 1985). Muskox numbers north of Great Bear Lake have been increasing steadily since the 1950s, when estimates of 500 - 600 animals were reported (Kelsall et al. 1971). In summer, muskoxen are generally found in the wet meadows bordering lakes and rivers, but in winter they forage on wind-swept uplands where snow depths are shallow (Carruthers and Jakimchuk 1981, Kelsall et al. 1971) or within wooded areas near the tree line where browse is available (Case and Poole 1985, Latour and Baird 1983).

The north-central part of the Horton Plain encompasses the calving ground of the Bluenose Caribou Herd (see Bluenose Caribou Calving Ground, page 35).

Other Conservation Interests: Parks Canada has identified a broad area centred around the Horton and Anderson rivers as a Natural Area of Canadian Significance (Canada Department of the Environment 1984d). This area overlaps the two muskox concentration areas along the Horton River.

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations.

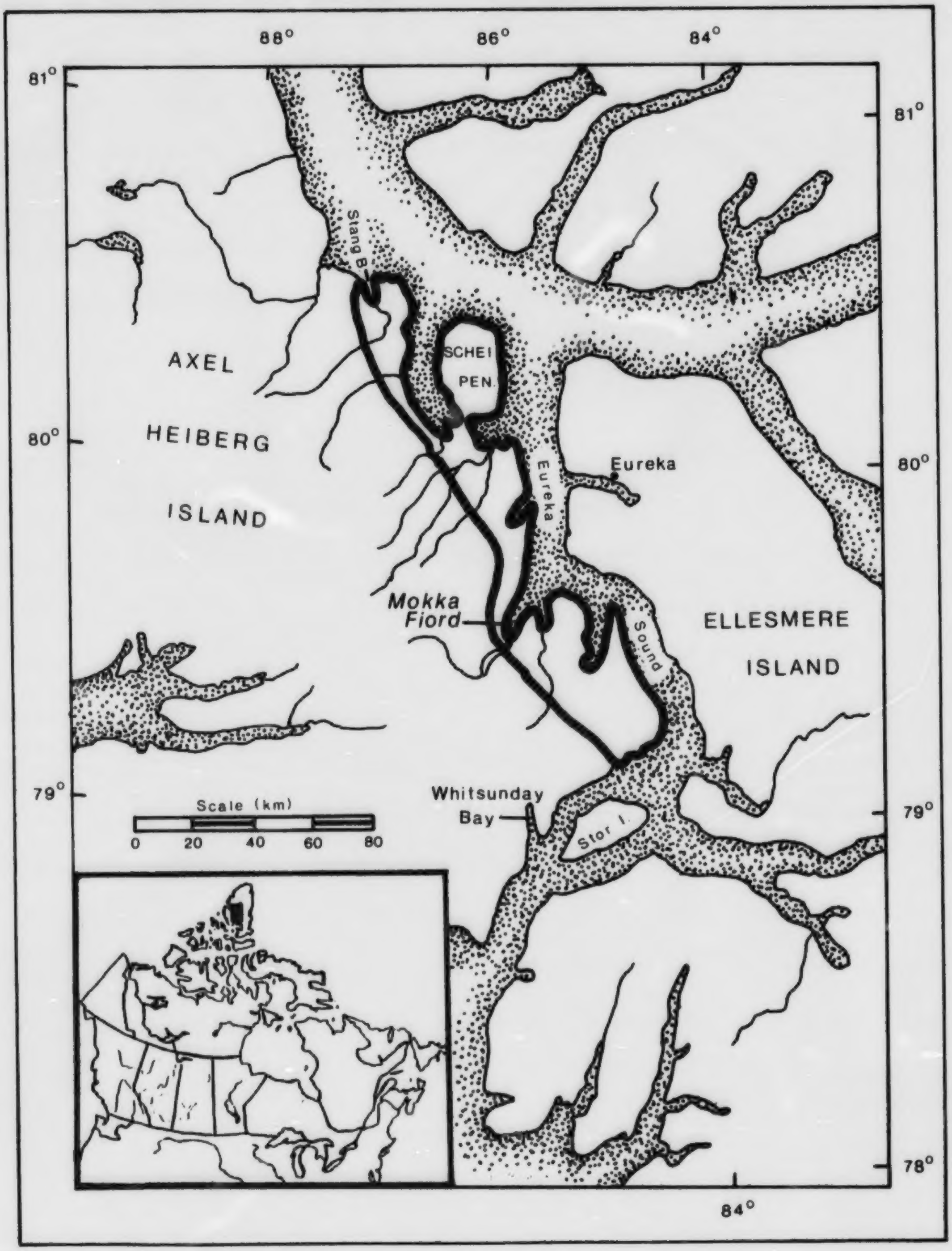

88°
86°
84°
81°
81°
80°
80°
79°
79°
78°
84°
AXEL
HEIBERG
ISLAND
ELLESMERE
ISLAND
Stang B.
SCHEI
PEN.
Eureka
Eureka
Sound
Mokka
Fiord
Whitsunday
Bay
Stor I.
Scale (km)
0
20
40
60
80

Figure 27. MOKKA FIORD

Name: MOKKA FIORD

Reference Number: 25

Schedule: 2

Location: The approximate geographic centre of the Mokka Fiord area on Axel Heiberg Island is located at 79°45'N, 87°30'W, 385 km northwest of the settlement of Grise Fiord and 40 km west of the weather station at Eureka.

Size: 3,100 km2

Boundary: The boundary is based on limited data from two reconnaissance surveys (1961 and 1973) and is subject to change pending further study of muskox populations on Axel Heiberg Island. Muskox densities at Mokka Fiord in 1973 were among the highest known in the Canadian Arctic and were comparable with those on Bailey Point, Melville Island (Parker and Ross 1976). However, population estimates may quickly become obsolete because muskox populations in the Queen Elizabeth Islands undergo periodic, large-scale fluctuations (Kelsall 1984). The current status of muskoxen on eastern Axel Heiberg Island is unknown, as is the importance of the Mokka Fiord area in relation to other parts of the island.

Natural Setting: The Mokka Fiord area lies within the Eureka Upland physiographic region, a rolling and ridged surface controlled by underlying folded strata (Bostock 1970). Elevations are generally less than 900 m asl, and there are extensive areas of low dissected plateaus and gently rolling uplands over bedrock of sandstone and shale. Hummocky tundra, ice-wedge polygons, gravel barrens and meandering streams are characteristic topographic features in the vicinity of Mokka Fiord. Parker and Ross (1976) recognized five broad vegetation types at Mokka Fiord: *Dryas-Salix* raised tundra, *Dryas-Salix*-moss hummocky tundra, mesic meadow, willow-moss mat and polar desert.

Importance to Wildlife: The most recent aerial reconnaissance of eastern Axel Heiberg Island took place in July 1973 when 866 muskoxen were observed between Stang Bay and Whitsunday Bay (Ross 1975). In 1961, a conservative estimate of 1,000 muskoxen was given for Axel Heiberg Island (Tener 1963). At that time, muskoxen were most numerous on the east coast from the vicinity of Stor Island north to Schei Peninsula. Recent population estimates are unavailable because the Mokka Fiord area has not been surveyed for many years. In early summer, muskoxen at Mokka Fiord select upland habitats which are the first to produce new growth of vegetation, predominantly mountain avens, willow and saxifrage (Parker and Ross 1976). Later in the season, muskoxen select the sedge-dominated communities of lowland areas.

The coastal lowlands of the delineated area are used by greater snow geese, primarily for moulting, but also as summer habitat for non-breeders (McCormick and Adams 1984).

Other Conservation Interests: The Mokka Fiord area encompasses a proposed IBP site (Nettleship and Smith 1975), and is included within the larger area of Axel Heiberg Island designated by Parks Canada as a Natural Area of Canadian Significance (Canada Department of the Environment 1984d).

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations.

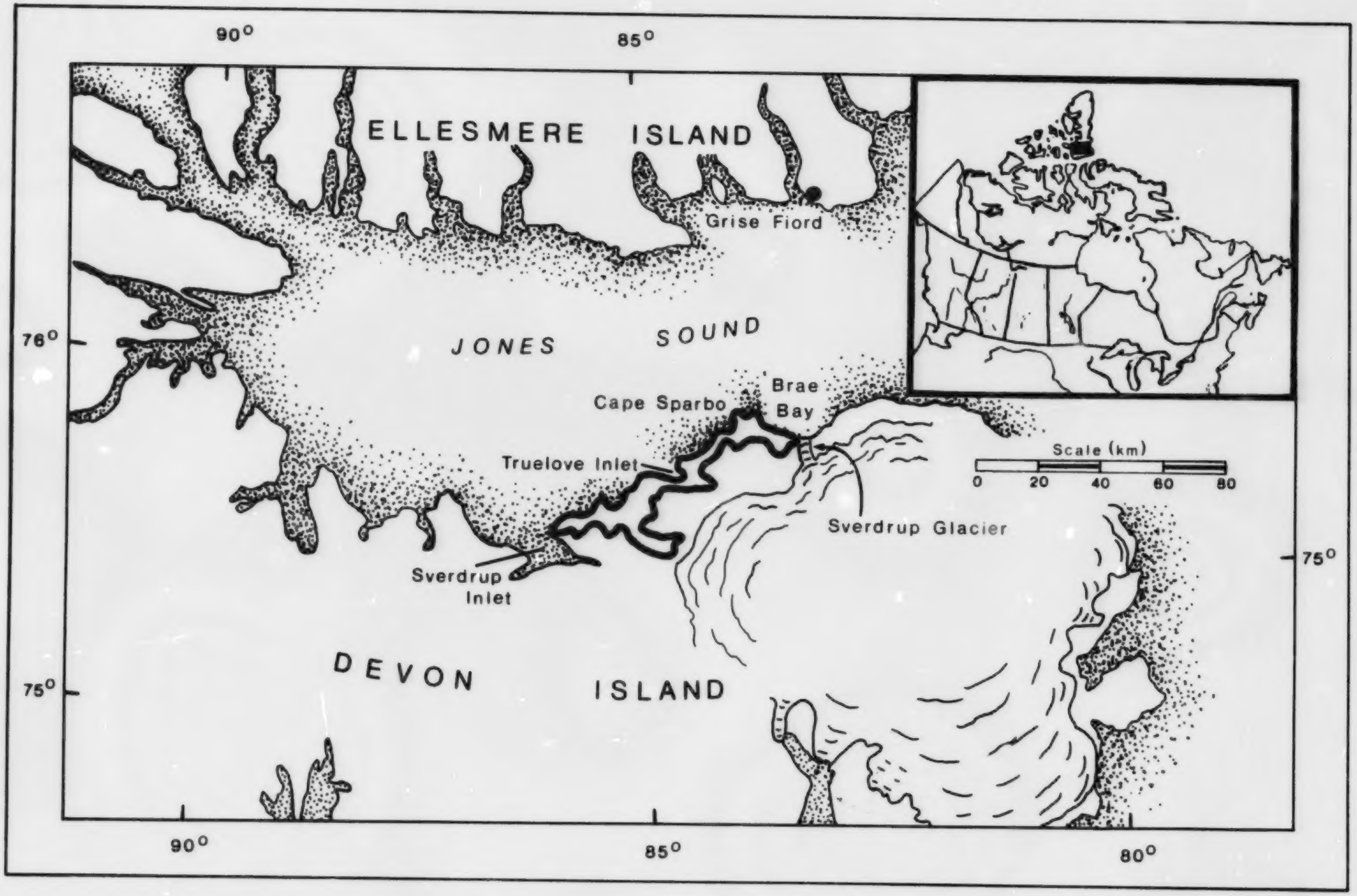

90°
85°
ELLESMERE ISLAND
Grise Fiord
JONES SOUND
76°
Cape Sparbo
Brae Bay
Truelove Inlet
Sverdrup Inlet
Sverdrup Glacier
Scale (km)
0 20 40 60 80
75°
DEVON ISLAND
75°
90°
85°
80°

Figure 28. TRUELOVE LOWLANDS

Name: TRUELOVE LOWLANDS

Reference Number: 26

Schedule: 2

Location: The approximate geographic centre of the Truelove Lowlands area on Devon Island is located at 75°40'N, 84°30'W, 100 km southwest of the settlement of Grise Fiord.

Size: 425 km^2

Boundary: Muskox range on northeastern Devon Island comprises the coastal lowlands below the 200 m contour between Sverdrup Inlet and the Sverdrup Glacier at Brae Bay (Hubert 1977). The boundary was drawn according to this source. Approximately 51 km^2 (12%) of this area is meadow habitat.

Natural Setting: Two physiographic regions are represented by this area: the Lancaster Plateau west of 84°30'W, and the Davis Highlands east of that longitude (Bostock 1970). The surface of the Lancaster Plateau slopes southward from 760 m asl on southern Ellesmere Island, across central Devon Island, to elevations of 300 - 600 m asl on Somerset Island and northwestern Baffin Island. The Davis Highlands, a mountainous region with permanent icecaps and peaks over 1,525 m asl, extend over eastern Devon Island. The topography of the delineated area is characterized by a level to slightly inclined coastal plain with a variety of deep, marine materials including fine-textured sediments, gravelly beach ridges, sandbars and spits (Canada Department of the Environment 1981a). The five major lowlands between Sverdrup Inlet and Sverdrup Glacier are separated from each other by coastal cliffs of granite and dolomite which rise to 300 m asl (Hubert 1974). Vegetation is mainly continuous, sedge-moss cover in depressions, and discontinuous herb-lichen and herb-moss cover on upland sites. A species list of the vascular plants of the Truelove Inlet region is given in Barrett and Teeri (1973). The lowlands are usually free of snow from the last week of June to the last week of August (Hubert 1974).

Importance to Wildlife: The lowlands between Brae Bay and Sverdrup Inlet provide year-round range for muskoxen; short seasonal movements occur from one lowland to another (Hubert 1977). In winter, the elevated, igneous outcrops constitute preferred range owing to the strong winds which help to keep the feeding areas free of snow (Harington 1964). In spring, muskoxen concentrate on the lowlands nearest Brae Bay to take advantage of the early snow melt and early emergence of green vegetation (Hubert 1974,1977). Population estimates of muskoxen for the Truelove Lowlands were consistently in the range of 230 - 300 animals for the period from 1966 to 1980 (Canada Department of the Environment 1981a, Freeman 1971, Hubert 1977). In the summer of 1984, Pattie (1986) counted 154 muskoxen (including 31 calves) on the five major lowlands.

The area in the vicinity of Cape Sparbo constitutes good habitat for greater snow geese, particularly during moulting (Hussell and Holroyd 1974, McCormick and Adams 1984). The Truelove Lowlands area is also known for its high diversity of breeding birds, mainly shorebirds and waterbirds (Pattie 1977).

Other Conservation Interests: The area between Brae Bay and Truelove Inlet was nominated as an IBP site (Nettleship and Smith 1975). The Arctic Institute of North America, in co-operation with the Polar Continental Shelf Project, established a research station on this site in 1960. The station is still in use.

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations.

POLAR BEAR

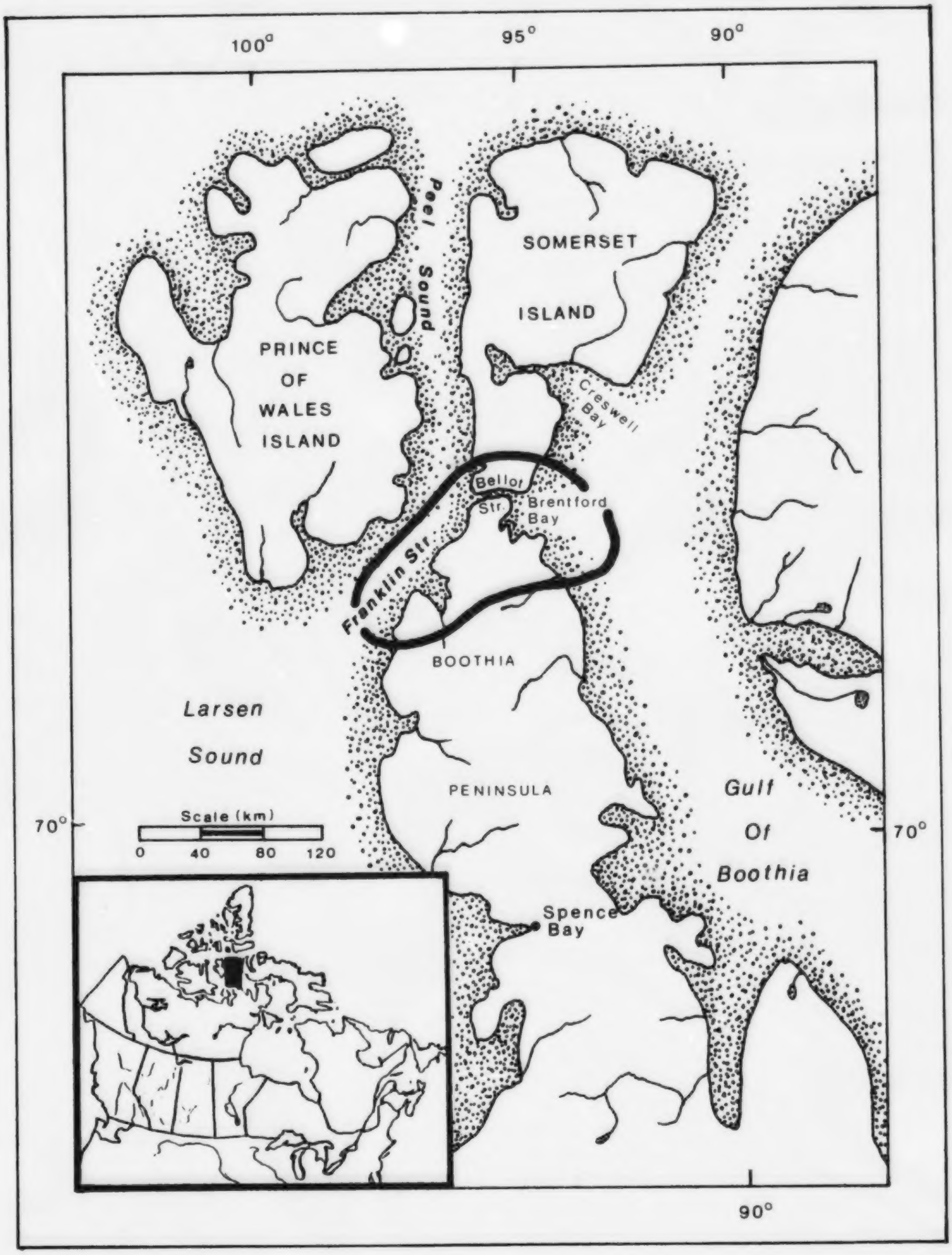

100°
95°
90°
Peel Sound
SOMERSET
ISLAND
PRINCE
OF
WALES
ISLAND
Creswell Bay
Bellot
Str.
Brentford Bay
Franklin Str.
BOOTHIA
Larsen
Sound
PENINSULA
Gulf
Of
Boothia
Scale (km)
0
40
80
120
70°
70°
Spence Bay
90°

Figure 29. BELLOT STRAIT

Name: BELLOT STRAIT

Reference Number: 27

Schedule: 1

Location: The approximate geographic centre of the Bellot Strait area is located at 71°40'N, 95°00'W, 260 km north of the settlement of Spence Bay in the District of Franklin.

Size: 10,300 km2

Boundary: The boundary is based on a known concentration area for polar bears, as determined from aerial surveys and mark-recapture studies between 1972 and 1978. Bears that inhabit this area are considered to be part of the lower, central arctic islands sub-population, which ranges from Victoria Island in the west to Baffin Island and Melville Peninsula in the east, and from 68° to 73°N latitude (Schweinsburg et al. 1981).

Natural Setting: The Bellot Strait area lies within the Boothia Plateau and Boothia Plain physiographic regions (Bostock 1970). The Boothia Plateau is a narrow projection of the Precambrian Shield which extends from the Wager Plateau north to Somerset Island and Peel Sound. Topography is a rolling, rocky and fractured upland with moderate relief and numerous bedrock outcrops (Canada Department of the Environment 1981b, c). The Boothia Plain forms part of the flat-lying sedimentary deposits of the Arctic Lowlands and is centred about the Gulf of Boothia. Topography is gently rolling with low to moderate relief and with extensive areas of alluvial and marine sediments (Canada Department of the Environment 1981c). Vegetation varies from a sparse cover of herbs and lichens on rocky uplands to continuous sedge, moss and grass cover on poorly drained lowlands and seepage areas. New ice begins to form in the Gulf of Boothia in October, but shifting ice during winter usually opens a lead along the coasts of Somerset Island and Boothia Peninsula (Schweinsburg et al. 1981). Open water also remains at the east end of Bellot Strait. A continuous sheet of pack ice covers Peel Sound and Franklin Strait from October until late spring.

Importance to Wildlife: The coastal areas of Boothia Peninsula adjacent to Franklin Strait and Brentford Bay are major concentration areas for polar bears in late winter and spring (March-June). From 1972 to 1978, 160 polar bears were captured in this area (Schweinsburg et al. 1981). Northern Boothia Peninsula is also an important maternity denning area from October until April, as evidenced by the number of females with cubs in this vicinity during the period of den emergence (Urquhart and Schweinsburg 1984). This denning area likely extends to the south end of Somerset Island (Schweinsburg et al. 1981). In summer, polar bears remain on the sea ice as long as possible; accordingly, they become concentrated along indented shorelines and near small islands where break-up is prolonged (Stirling et al. 1979). Brentford Bay is a documented "summer retreat" (Schweinsburg et al. 1981). The lower, central arctic islands polar bear population is estimated conservatively at 1,100 animals, with approximately 440 of these inhabiting Franklin Strait, Larsen Sound, Bellot Strait, Brentford Bay and the north end of the Gulf of Boothia (Urquhart and Schweinsburg 1984).

The area of open water near Bellot Strait is important to migrating waterfowl, particularly eiders, in early spring (McCormick and Adams 1984). Colonies of Thayer's gulls and glaucous gulls occur within the delineated area. The northern half of Boothia Peninsula provides year-round range for approximately 4,500 caribou (June 1985 estimate; A. Gunn pers. comm.) (see also Wrottesley Inlet, page 59).

Other Conservation Interests: The delineated area encompasses a proposed IBP site (Nettleship and Smith 1975). Parks Canada has designated the Creswell Bay area immediately to the north as a Natural Area of Canadian Significance (Canada Department of the Environment 1984d).

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations.

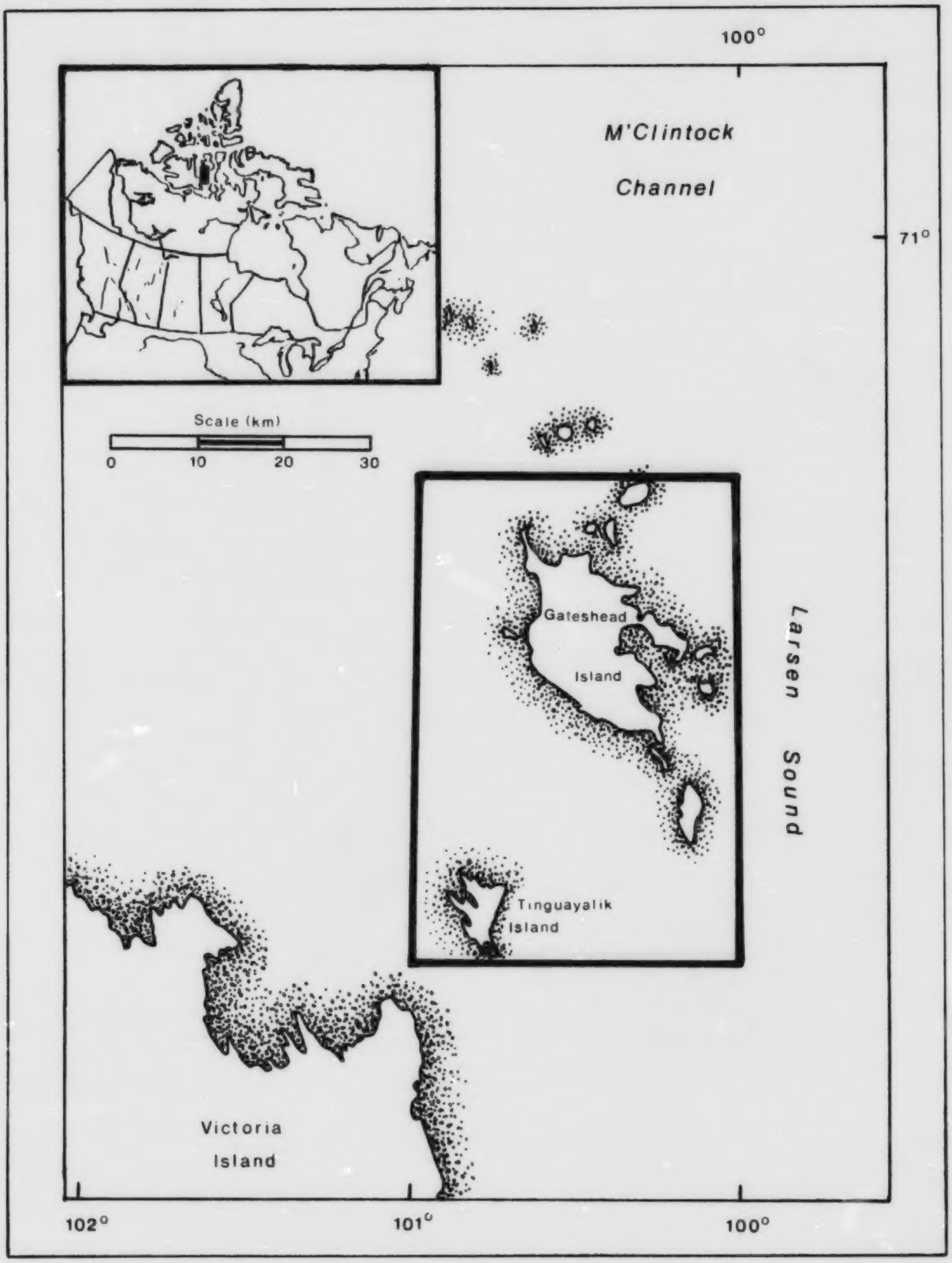

100°
M'Clintock
Channel
71°
Scale (km)
0
10
20
30
Gateshead
Island
Larsen Sound
Tinguayalik
Island
Victoria
Island
102°
101°
100°

Figure 30. GATESHEAD ISLAND

Name: GATESHEAD ISLAND

Reference Number: 28

Schedule: 1

Location: The approximate geographic centre of the Gateshead Island area is located at 70°30'N, 100°30'W, 235 km northeast from the community of Cambridge Bay in the District of Franklin.

Size: 2,000 km2

Boundary: The Gateshead Island area includes all lands on Gateshead Island, Tinguayalik Island and the small, unnamed islands lying within the circumscribed area defined by 101°00'W on the western limit, 70°45'N on the northern limit, 100°00'W on the eastern limit, and 70°15'N on the southern limit.

Natural Setting: Gateshead Island and the adjacent small islands lie within the Victoria Lowland physiographic region (Bostock 1970), and are characterized by low-lying and gently rolling topography. Gateshead Island encompasses about 260 km2 and has a maximum elevation of 41 m asl. Much of the topographic relief of Gateshead Island is due to the presence of raised beaches (Canada Department of the Environment 1983c). The west coast of Gateshead Island is fairly regular, while the east coast is irregular and is indented by many small bays and peninsulas. The largest of the satellite islands, locally known as Tinguayalik Island, is 30 km2 in size. Ice remains in M'Clintock Channel throughout the year. During the warmest months, July and August, melting occurs along the coasts and open-water shore leads may form adjacent to the islands. Vegetation on the islands consists of a sparse to discontinuous cover of willow, mosses and herbs intermixed with extensive barren ground (Canada Department of the Environment 1983c). Gateshead and Tinguayalik islands contain many small, shallow ponds which are ice-free for only six to eight weeks each summer.

Importance to Wildlife: Gateshead Island and its satellite islands are of primary importance to polar bears. This area constitutes one of the highest density denning areas recorded in the Canadian Arctic Archipelago. The presence of polar bear dens was first confirmed for Gateshead Island in 1977, although Inuit hunters from Cambridge Bay had reported denning earlier (Spencer and Schweinsburg 1979). During ground surveys, Schweinsburg et al. (1984) recorded 9 confirmed and 10 suspected polar bear dens in April 1977, and 15 dens in April 1982, 10 of which were identified as maternity dens.

The coastal areas on the east side of Gateshead Island appear to be the most suitable denning habitats on the island. Most of the 1977 and 1982 dens were located in the broken and elevated terrain on the eastern side, usually within 1 km of the coast (Schweinsburg et al. 1984). The lack of topographic relief on the rest of the island and on nearby coastal areas of Victoria Island makes them generally unsuitable for denning. Favourable ice conditions and good seal habitat around Gateshead Island may also contribute to its importance to polar bears (A. Gunn pers. comm.).

Bears that den at Gateshead Island belong to the lower, central arctic islands sub-population (Schweinsburg et al. 1981). The approximate geographic limits of this sub-population are from the east coast of Victoria Island to Baffin Island and Melville Peninsula, and between 68° and 73°N latitude (Urquhart and Schweinsburg 1984). Bears from this sub-population exhibit a high degree of geographic fidelity during winter (Schweinsburg et al. 1981), so it is likely that Gateshead Island is of long-term importance to polar bears as a denning area. This area is also recognized as a concentration area for bears of all ages during the period from March to June.

Schweinsburg et al. (1984) recommend that the Gateshead Island area should be protected from human intrusion.

Other Conservation Interests: None has been identified.

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations.

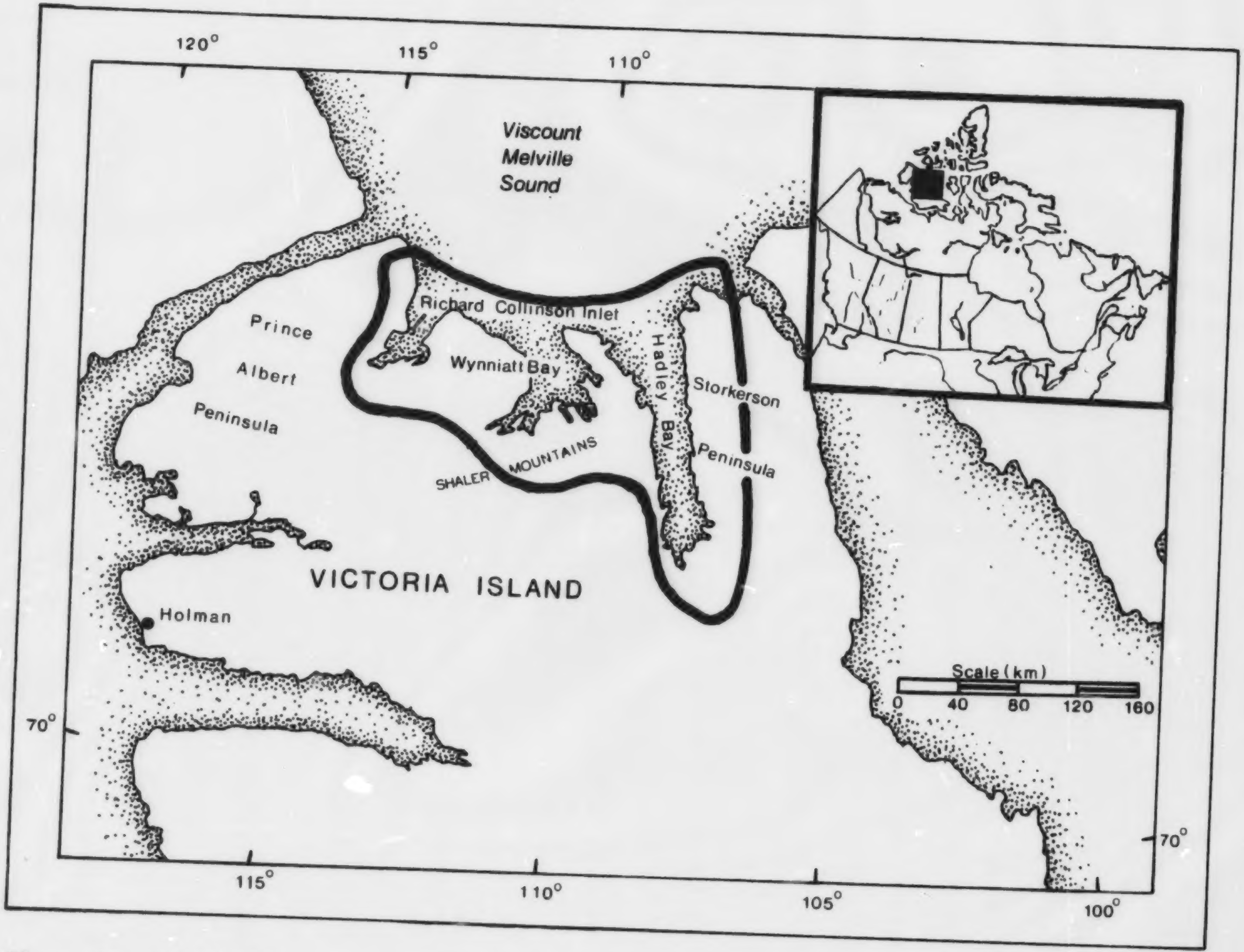

120°
115°
110°
Viscount
Melville
Sound
Prince
Albert
Peninsula
Richard Collinson Inlet
Wynniatt Bay
Hadley
Bay
Storkerson
Peninsula
SHALER MOUNTAINS
VICTORIA ISLAND
Holman
Scale (km)
0
40
80
120
160
70°
115°
110°
105°
100°
70°

Figure 31. HADLEY BAY

Name: HADLEY BAY

Reference Number: 29

Schedule: 1

Location: The approximate geographic centre of the Hadley Bay area is located at 72°40'N, 110°30'W, 330 km northeast of the settlement of Holman in the District of Franklin.

Size: 28,300 km^2

Boundary: The boundary is based on a known concentration area for polar bears, as determined from aerial surveys and mark-recapture studies during 1972 - 1978. The range limits of bears occupying Hadley Bay, Wynniatt Bay, Richard Collinson Inlet and southern Viscount Melville Sound are unknown. They may be affiliated with the western Queen Elizabeth Islands sub-population to the north because there are no major physical barriers across Viscount Melville Sound to restrict movements (Urquhart and Schweinsburg 1984). Mark-recapture results suggest that the bears from Hadley and Wynniatt bays comprise a relatively distinct group from the lower central arctic islands sub-population to the southeast (Schweinsburg et al. 1981).

Natural Setting: The Hadley Bay area lies within the Victoria Lowland and Shaler Mountains physiographic regions (Bostock 1970). The smooth, undulating surface of the Victoria Lowland is covered by a variety of glacial deposits with extensive areas of drumlinoid ridges. The Shaler Mountains are characterized by stratified sediments with intrusions of gabbro sills which form cuestas and are capped by rocks of volcanic origin. Elevations in the central part of the mountains approach 760 m asl. The coastlines of Wynniatt Bay and northern Hadley Bay are steep bluffs with little coastal plain; there is less relief at the south end of Hadley Bay (Schweinsburg et al. 1981). The southern reaches of Hadley and Wynniatt bays are generally free of ice by mid-August; new ice begins to form in September. Vegetation on rocky uplands varies from a sparse cover of lichens to communities of purple saxifrage, arctic poppy, cinquefoil and lichen in areas of soil accumulation (Canada Department of the Environment 1982d). Poorly drained lowlands and seepage areas support growths of sedges, mosses and grasses.

Importance to Wildlife: The coastal areas of Victoria Island adjacent to Wynniatt and Hadley bays and Richard Collinson Inlet are important denning areas for polar bears, as indicated by the number of family groups with cubs of the year captured there. For 1974, 1975 and 1976, Hadley Bay supported on average of 140 polar bears per year (Schweinsburg et al. 1981). The denning period begins between October and December, when pregnant females enter their dens (Harington 1968), and generally ends in March or April (J. Lee pers. comm.). Polar bears are also concentrated near the coastlines of Wynniatt Bay and Hadley Bay in late winter and spring (March - June), and may remain there in summer during the open-water period (Schweinsburg et al. 1981). Polar bears remain on the sea ice as long as possible, and in spring and summer they become concentrated near small islands and along indented coastlines where break-up is prolonged (Stirling et al. 1979, Urquhart and Schweinsburg 1984). Hadley Bay is an important feeding area for polar bears because of the large numbers of ringed seals which breed on the first-year ice (Canada Department of the Environment 1982d).

The lowlands along the west side of Hadley Bay provide foraging habitat for muskoxen. In 1980, the coastal areas adjacent to Wynniatt Bay and west of Hadley Bay supported the highest muskox concentrations on the eastern half of Victoria Island (Jakimchuk and Carruthers 1980). The rugged topography associated with the Shaler Mountains provides nesting habitat for rough-legged hawks, peregrine falcons and gyrfalcons (Canada Department of the Environment 1982d).

Other Conservation Interests: A large area encompassing Hadley Bay and Wynniatt Bay is included on Environment Canada's list of significant conservation lands in northern Canada (Canada Department of the Environment 1982d,1984d).

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations.

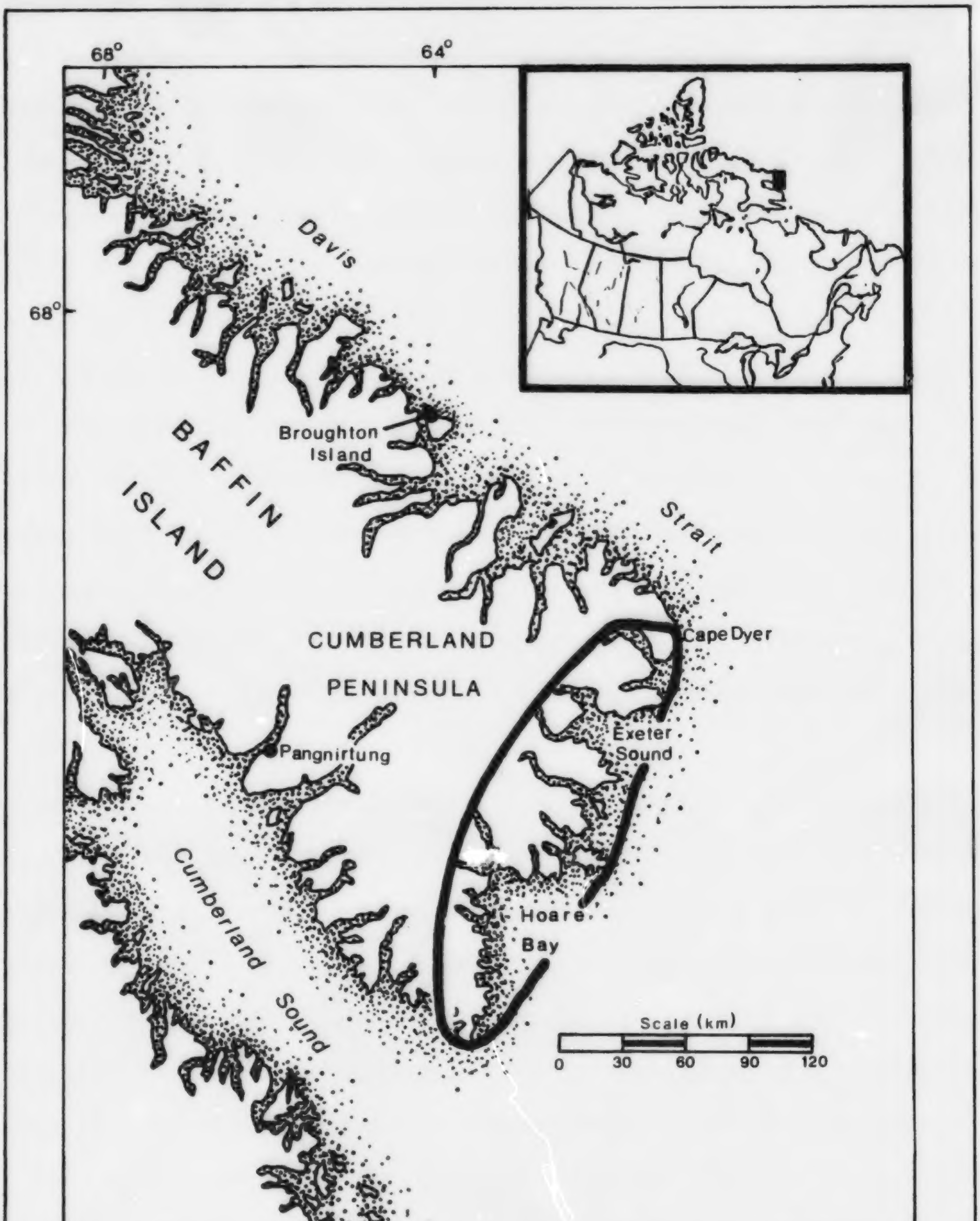

68°
64°
68°
Davis
Strait
BAFFIN
ISLAND
Broughton Island
CUMBERLAND
PENINSULA
Cape Dyer
Exeter Sound
Pangnirtung
Hoare Bay
Cumberland Sound
Scale (km)
0
30
60
90
120
64°

Figure 32. HOARE BAY

Name: HOARE BAY

Reference Number: 30

Schedule: 1

Location: The approximate geographic centre of the Hoare Bay area is located at 65°50'N, 62°45'W, 135 km east of the settlement of Pangnirtung in the District of Franklin.

Size: 11,600 km2

Boundary: The boundary is based on information on polar bear distributions obtained from aerial surveys and mark-recapture studies from 1974 to 1979 (Jonkel et al. 1978, Stirling et al. 1980). Along the southeast coast of Baffin Island, landfast ice, which is the preferred habitat of polar bears from late winter through late spring, extends only a few kilometres offshore, roughly to a line drawn between headlands (Stirling et al. 1980). The southeastern boundary of the delineated area was drawn according to this criterion; the western boundary extends inland as far as the heads of the major fiords and inlets. In addition to providing denning habitat, inland areas of southeastern Baffin Island are used extensively by polar bears as travel corridors in order to avoid hazardous crossings of open water with strong currents and unstable ice (Urquhart and Schweinsburg 1984).

Natural Setting: The Hoare Bay area lies within the Davis Highlands physiographic region, a rugged, mountainous area of deeply dissected crystalline rocks (Bostock 1970). Higher elevations, which exceed 2,000 m asl, are characterized by permanent ice caps and glaciers. Coastal areas are also mountainous and are indented by many, long fiords and inlets with steep slopes. Vegetation is generally sparse, particularly in upland areas, and is dominated by low shrubs and grass-like herbs, mosses and lichens. Along Cumberland Peninsula, new sea ice forms in the bays and fiords in mid-October to November, but storms and tidal currents keep the ice in motion so that landfast ice does not extend more than a few kilometres offshore (Stirling et al. 1980). Maximum ice accumulation occurs by March - April; the period of maximum open water occurs in August and September.

Importance to Wildlife: The major denning area for polar bears on southeastern Baffin Island occurs along the east coast of Cumberland Peninsula. In 1974 and 1975, Jonkel et al. (1978) estimated that approximately 150 cubs were produced from this denning area. Characteristically, dens are located on steep slopes along river banks or lake shores and are generally within a few kilometres of the coast. Most females with cubs of the year leave their dens by mid-April and travel to the nearest coast where they feed on ringed seal pups in the landfast ice close to shore (Stirling et al. 1980). Along the Cumberland Peninsula, the restricted distribution of suitable feeding habitat (i.e., landfast ice and the associated flow edge) tends to concentrate bears in specific areas, resulting in relatively high densities compared to other areas in the Canadian Arctic, where inter-island channels are usually frozen completely (Urquhart and Schweinsburg 1984). Consequently, areas such as Hoare Bay and Exeter Sound are important feeding areas for male and female bears of all ages during late winter and spring. Stirling et al. (1980) reported that the polar bears of southeastern Baffin Island show a high degree of fidelity to these feeding habitats. The most recent population estimate for southeastern Baffin Island is 700 - 900 bears (Stirling et al. 1980).

A nesting colony of approximately 2,000 - 3,000 pairs of northern fulmars is located on an island in Exeter Sound (McCormick and Adams 1984).

Other Conservation Interests: Parks Canada has expressed preliminary interest in Cumberland Sound as a national marine park (Canada Department of the Environment 1984d), but this area borders only a very small part of the polar bear denning area.

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations.

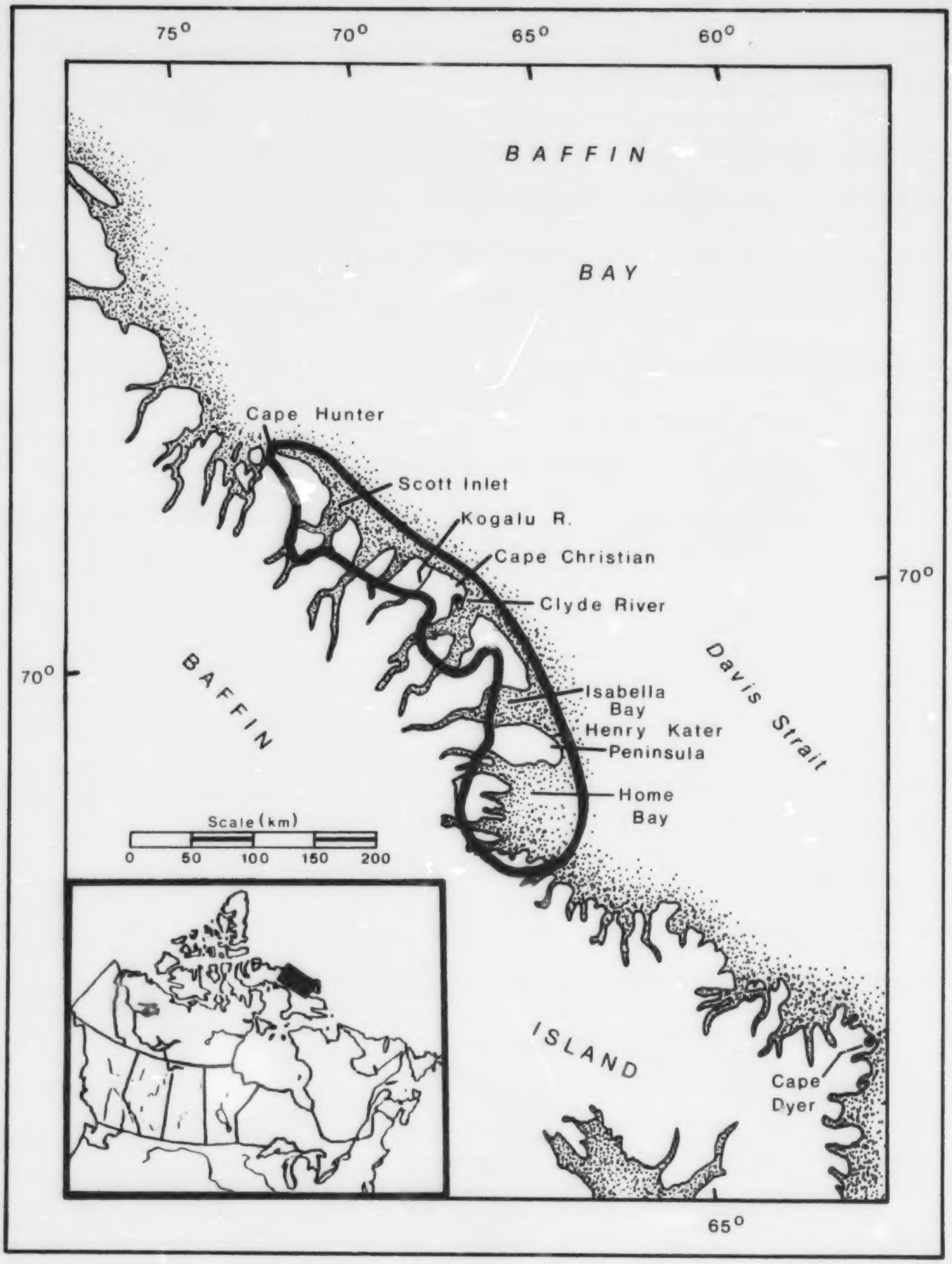

75°
70°
65°
60°
BAFFIN
BAY
Cape Hunter
Scott Inlet
Kogalu R.
Cape Christian
Clyde River
70°
70°
BAFFIN
Davis Strait
Isabella Bay
Henry Kater Peninsula
Home Bay
Scale (km)
0
50
100
150
200
ISLAND
Cape Dyer
65°

Figure 33. HOME BAY

Name: HOME BAY

Reference Number: 31

Schedule: 1

Location: The approximate geographic centre of the delineated area is located at 70°10'N, 68°30'W, 30 km south of the settlement of Clyde River in the District of Franklin.

Size: 23,000 km2

Boundary: The boundary is based on a known concentration area for polar bears as determined from aerial surveys, mark-recapture studies and radio-telemetry studies conducted between 1980 and 1985 (Lee 1982, pers. comm.; Lee and Schweinsburg 1982a,b). Bears that use the delineated area are considered to be part of the northern Baffin Bay population which ranges from Cape Dyer in the south to Thule, Greenland in the north (J. Lee pers. comm.).

Natural Setting: The Home Bay area lies within the Davis Highlands and Baffin Coastal Lowland physiographic regions (Bostock 1970). The Davis Highlands region is a rugged, mountainous area of deeply dissected, crystalline rocks. Higher elevations exceed 2,000 m asl and are characterized by permanent ice caps and glaciers. Coastal areas of the Davis Highlands are also mountainous and are indented by many long, steep-sided fiords and inlets. The Baffin Coastal Lowland forms a narrow, coastal plain, extending from Henry Kater Peninsula to Cape Hunter. Elevations are generally less than 200 m asl. The lowland's greatest width is about 40 km, but generally it occurs as isolated, narrow strips at the ends of the peninsulas and islands (Bostock 1970). Inland, the lowland is bordered by hills which progressively rise in elevation to form the mountains of the Davis Highlands. Numerous ponds, raised beaches, and shallow wetland depressions are interspersed throughout the lowland habitats. Baffin Bay is usually free of ice by late August or early September, but ice often remains longer in Home Bay and along Henry Kater Peninsula (J. Lee pers. comm.). New ice begins to form along the east coast of Baffin Island in October. In winter, a floe edge occurs approximately 30 - 40 km offshore each year.

Importance to Wildlife: The coastal plain along northeastern Baffin Island is a major concentration area and "summer retreat" for polar bears during August and September. During break-up, polar bears remain on the sea ice of Baffin Bay and Davis Strait as long as possible but they retreat to land when the ice disappears. The highlands adjacent to the Baffin Coastal Lowland provide important denning habitat for polar bears; females with cubs of the year are frequently observed all along the coast in spring (J. Lee pers. comm.). The Northern Baffin Bay population is currently estimated at between 300 and 600 polar bears (Lloyd 1986).

A colony of approximately 25,000 nesting pairs of northern fulmars is located at Scott Inlet (McCormick et al. 1984). Isabella Bay is a major summering area for most of the endangered, eastern arctic population of bowhead whales (World Wildlife Fund 1986). The first nesting record of the dovekie in the Canadian Arctic was documented by Finley and Evans (1984) in August 1983 on a small island in northern Home Bay.

Other Conservation Interests: The fulmar colony at Scott Inlet has been identified by the Canadian Wildlife Service as a Key Migratory Bird Terrestrial Habitat Site (McCormick et al. 1984) and was previously nominated as an IBP site (Nettleship and Smith 1985). The World Wildlife Fund (1986) has recommended that Isabella Bay be given some protective status. The coastal lowland between Cape Christian and Kogalu River was also nominated as an IBP site (Nettleship and Smith 1985).

Protective Status: Land-use activities are regulated under the *Territorial Lands Act* and Territorial Land Use Regulations.

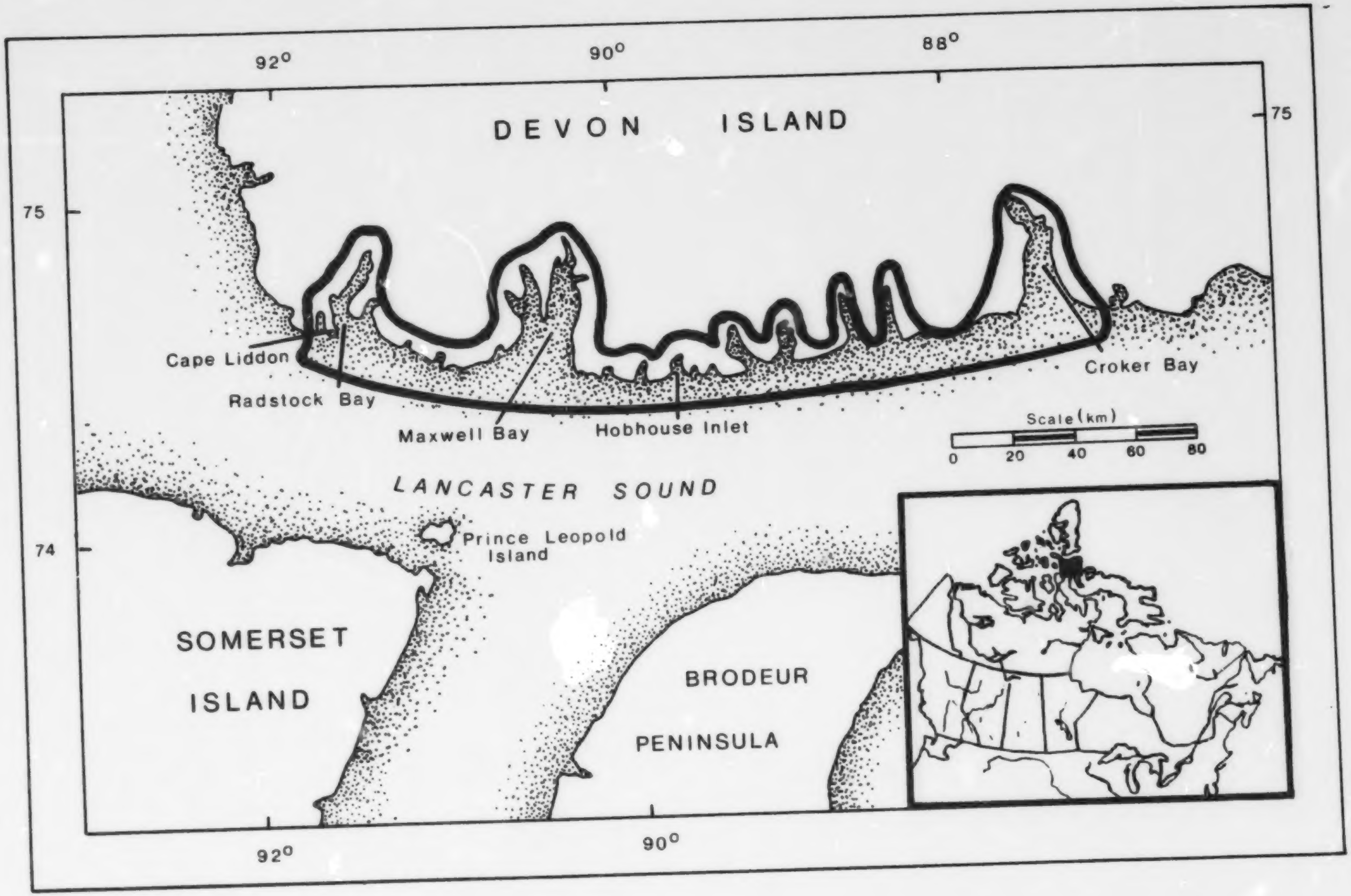

92°
90°
88°
75
75
74
DEVON ISLAND
Cape Liddon
Radstock Bay
Maxwell Bay
Hobhouse Inlet
Croker Bay
Scale (km)
0
20
40
60
80
LANCASTER SOUND
Prince Leopold Island
SOMERSET ISLAND
BRODEUR PENINSULA
92°
90°

Figure 34. MAXWELL BAY

Name: MAXWELL BAY

Reference Number: 32

Schedule: 1

Location: The approximate geographic centre of the Maxwell Bay area is located at 74°30'N, 87°00'W, 170 km north of the settlement of Arctic Bay in the District of Franklin.

Size: 5,300 km2

Boundary: The boundary is based on a known concentration area for polar bears, as determined from aerial surveys and mark-recapture studies from 1970 to 1977 (Stirling et al. 1979) and from 1978 to 1979 (Schweinsburg et al. 1982). The southern boundary was drawn to include the open-water lead located approximately 5 km offshore, which frequently parallels the full length of southern Devon Island in winter (Smith and Rigby 1981). During winter, the floe edge of this shore lead and associated rough ice are important habitats for polar bears (Schweinsburg et al. 1982). The northern boundary of the area approximates the 100 m contour.

Natural Setting: The Maxwell Bay area lies within the Lancaster Plateau physiographic region (Bostock 1970). This region is underlain by sedimentary rocks, and the surface of the plateau slopes southward from about 760 m asl on southern Ellesmere Island, across central Devon Island to elevations of 300 - 600 m asl on Somerset Island and the Brodeur Peninsula. The southern coast of Devon Island is characterized by steep cliffs with steeply banked, talus slopes (Stirling et al. 1979) and is indented with numerous bays and fiords - the largest being Radstock, Maxwell and Croker bays. Higher elevations are capped by permanent ice fields, and several glaciers reach sea level (Canada Department of the Environment 1981d). Landfast ice in Lancaster Sound forms by late September or early October, although a system of shore leads usually develops in November and December and persists throughout the winter until break-up (Smith and Rigby 1981). A lead consistently develops in the vicinity of Prince Leopold Island, runs north toward Maxwell Bay and east along the south coast of Devon Island. Ice loosens in Lancaster Sound in June as the lead along Devon Island widens, and by mid-August the sound is generally free of ice.

Importance to Wildlife: In summer, the south coast of Devon Island, particularly Radstock, Maxwell and Croker bays, provides important habitat for polar bears (Schweinsburg et al. 1982). During this season, bears occupy areas where landfast ice persists late into the summer and where seals can still be hunted (Stirling et al. 1979). The irregular coastline of southern Devon Island delays break-up of ice in the bays and inlets in summer and they are among the first areas to freeze again in the fall. Based on mark-recapture studies, Stirling et al. (1979:23) reported that "the high degree of fidelity of polar bears for these summer feeding areas further emphasizes the ecological significance of these bays to the bears." Polar bears are also concentrated along the south Devon coast in late winter (April - May) to take advantage of favourable ice conditions for hunting. In 1978 and 1979, Schweinsburg et al. (1980) noted that most bears were within 7 km of the Devon Island coastline; they estimated a population of 1,031 polar bears for Lancaster Sound during 1979.

The delineated area encompasses two Key Migratory Bird Terrestrial Habitat Sites: Cape Liddon, which supports approximately 10,000 nesting pairs of northern fulmars (3% of the national population); and Hobhouse Inlet, which is the nesting site of approximately 75,000 pairs of northern fulmars (20% of the national population) (McCormick et al. 1984). The coastline between Radstock Bay and Croker Bay also supports several nesting colonies of glaucous gulls, Thayer's gulls and black guillemots (McCormick and Adams 1984).

Other Conservation Interests: The delineated area overlaps three proposed IBP sites (Nettleship and Smith 1985), and Parks Canada has expressed preliminary interest in the Radstock and Maxwell bays area for consideration as a marine park (Canada Department of the Environment 1984d). The Canadian Wildlife Service is interested in southern Devon Island for the protection of the fulmar colonies.

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations.

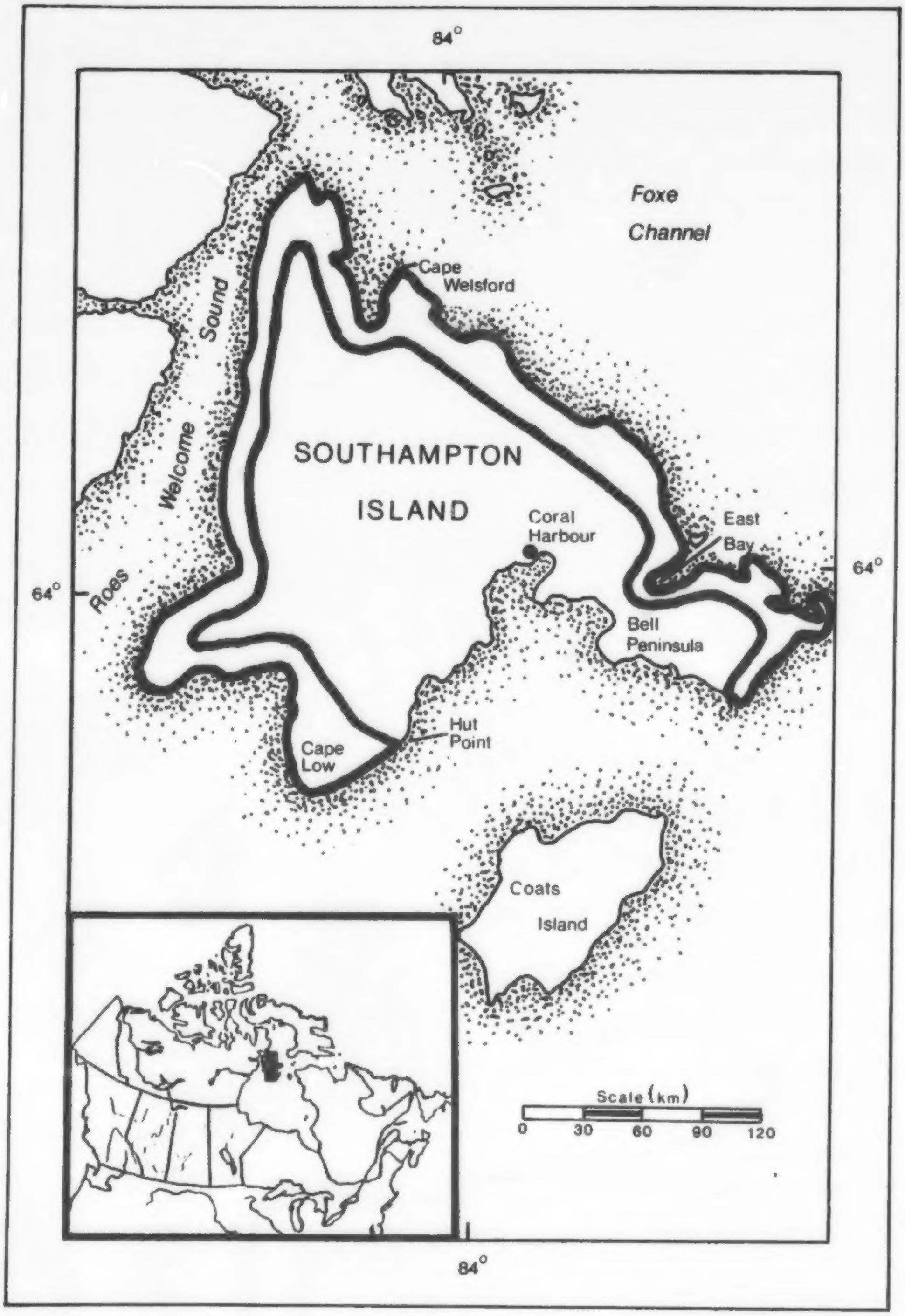

84°
Foxe
Channel
Cape
Welsford
Sound
Welcome
Roes
SOUTHAMPTON
ISLAND
Coral
Harbour
East
Bay
64°
64°
Bell
Peninsula
Hut
Point
Cape
Low
Coats
Island
Scale (km)
0
30
60
90
120
84°

Figure 35. SOUTHAMPTON ISLAND

Name: SOUTHAMPTON ISLAND

Reference Number: 33

Schedule: 1

Location: The approximate geographic centre of Southampton Island is located at 64°30'N, 84°15'W, 70 km northwest of the settlement of Coral Harbour in the District of Franklin.

Size: 14,000 km2

Boundary: The boundary of the delineated area encompasses a core denning area for polar bears and important concentration areas during summer (Lunn et al. In prep., Lunn and Stenhouse In prep., Stenhouse and Lunn In prep.). Since 1984, the Department of Renewable Resources has been investigating the population characteristics of polar bears in the Foxe Basin region. Most efforts to date have focused on Southampton Island and the Wager Bay area (see Wager Bay, page 169). Future surveys of new areas may contribute additional information on the locations of important habitats for polar bears.

Natural Setting: Southampton Island is divided along a northwest-southeast axis into two physiographic regions: the Melville Plateau and the Southampton Plain (Bostock 1970). The Melville Plateau, a relatively smooth upland of Precambrian bedrock (460 - 610 m asl), dominates the northeastern part of the island. The upland is generally hilly with localized areas of rugged relief and steep coastal cliffs (Canada Department of the Environment 1984b). The Southampton Plain comprises level to undulating coastal plains with calcareous, marine deposits over limestone bedrock. Raised beach ridges and shattered limestone barrens are common (Canada Department of the Environment 1984c). Elevations on the Southampton Plain rarely exceed 90 m asl (Bostock 1970). The dominant vegetation is a discontinuous cover of lichens, herbs, heaths and low shrubs. Freeze-up of Foxe Channel generally occurs in early to mid-November, but the ice remains broken and mobile throughout the winter months as a result of winds, tides and currents (Canada Department of the Environment 1984b, Smith and Rigby 1981).

Importance to Wildlife: The Precambrian upland of northeastern Southampton Island provides important denning habitat for polar bears. The topographic relief associated with valley slopes, hills, cliffs and rock outcrops creates suitable conditions for maternity dens because snow accumulates on the low, south-facing slopes of these features (Canada Department of the Environment 1984b, Harington 1968). Harington (1968) reported that the average elevation of 56 dens on eastern Southampton Island was 277 m asl; the majority were within 16 km of the coast. The coastal areas of Southampton Island, particularly the southwest and northeast coastlands, also provide important summer habitat for polar bears (Lunn et al. In prep., Lunn and Stenhouse In prep., Stenhouse and Lunn In prep.). During break-up, prevailing northeasterly winds and the general counter-clockwise flow of ocean currents in Foxe Basin tend to cause ice floes to concentrate along the northeast coast (Lunn et al. In prep.). These factors probably account for the high numbers of polar bears on Southampton Island. The southeast and southwest coastlands may be especially important as "summer retreats" because, during autumn, ice forms first in these areas (Stenhouse and Lunn In prep.).

East Bay Bird Sanctuary and the surrounding plain support a nesting population of approximately 21,000 pairs of lesser snow geese, and southwestern Southampton Island (including the Harry Gibbons Bird Sanctuary) supports a nesting population of approximately 95,000 pairs of lesser snow geese, as well as nesting populations of brant, Canada geese and tundra swans (McCormick et al. 1984).

Other Conservation Interests: The Canadian Wildlife Service has identified two sites on Southampton Island as Key Migratory Bird Terrestrial Habitat Sites (McCormick et al. 1984). The delineated area overlaps two proposed IBP sites (Nettleship and Smith 1985). Parks Canada has expressed interest in southwestern Southampton Island for national park purposes, and in the surrounding coastal waters for marine park purposes (Canada Department of the Environment 1984d).

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations.

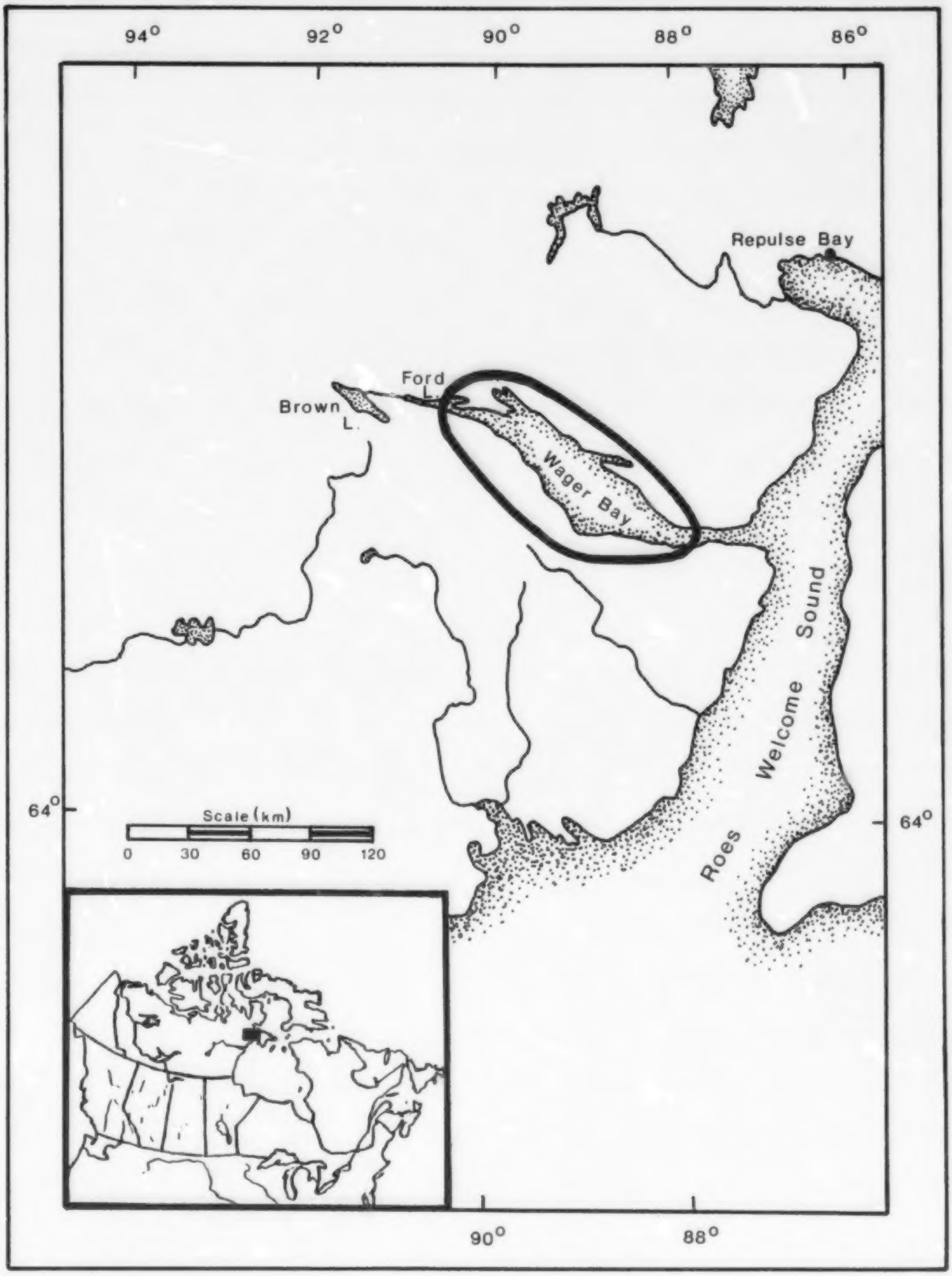

94°
92°
90°
88°
86°
Repulse Bay
Ford L.
Brown L.
Wager Bay
Sound
Welcome
Roes
64°
64°
Scale (km)
0
30
60
90
120
90°
88°

Figure 36. WAGER BAY

Name: WAGER BAY

Reference Number: 34

Schedule: 1

Location: The approximate geographic centre of the Wager Bay area is located at 65°30'N, 89°10'W, 165 km southwest of the settlement of Repulse Bay in the District of Keewatin.

Size: 6,300 km2

Boundary: The boundary of the delineated area encompasses important polar bear habitat, as determined from aerial surveys (1976 and 1977) and ongoing mark-recapture studies (1985 to present) (Donaldson et al. 1981, Lunn and Stenhouse In prep., N. Lunn pers. comm.). The north and south coasts comprise an important "summer retreat" during the open-water season, and the south coast also provides important denning habitat during winter (Urquhart and Schweinsburg 1984).

Natural Setting: The delineated area lies within the Wager Plateau physiographic region, a rocky upland which rises gradually from sea level at Roes Welcome Sound to 600 m asl inland (Bostock 1970). The topography north of Wager Bay is characterized by a rolling to hilly upland with boulder fields, bedrock outcrops, and localized glacial features in the form of eskers, drumlinoid hills and fluted moraine (Canada Department of the Environment 1980b,1984a). A coastal plain approximately 16 km in width separates the north shore of Wager Bay from the more rugged topography further inland (Donaldson et al. 1981). The south shore of Wager Bay rises sharply from the water to about 500 m asl; the topography ranges from rolling to hilly to mountainous. Break-up occurs in early July, and the bay is generally free of ice from August until late September. At the inlet and outlet of Wager Bay, water is kept ice-free all year by tidal action in the narrow channels.

Importance to Wildlife: The coastal areas of Wager Bay, particularly the south coast, provide important summer habitat for polar bears. In August and September 1985, 31 of 45 bears observed at Wager Bay were on the south side (Lunn and Stenhouse In prep.). Similar distributions were obtained in the summers of 1976 and 1977; bears were more common on the high cliffs of the south shore than on the gently sloping north shore (Donaldson et al. 1981). Three factors contribute to the area's importance to polar bears: an extended season of ice cover, a relatively high density of ringed seals, and favourable denning habitat along the south coast (Canada Department of the Environment 1984a, Davidge 1980, Donaldson et al. 1981, N. Lunn pers. comm.). In winter, the long, deep snowdrifts associated with the hills, valleys and ravines of the south coast provide ideal conditions for maternity dens. Bears that use the Wager Bay area are considered to be part of the Foxe Basin population, but a recent population estimate is not available.

The Wager Bay area is one of the most productive nesting areas in the NWT for peregrine falcons (see Ford Lake, page 87), and caribou from the Lorillard and Wager herds calve in the vicinity of Wager Bay (see Northeastern Keewatin Caribou Calving Grounds, page 51).

Other Conservation Interests: Parks Canada has expressed interest in the Wager Bay area for the purposes of establishing a national park (Canada Department of the Environment 1984d).

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations.

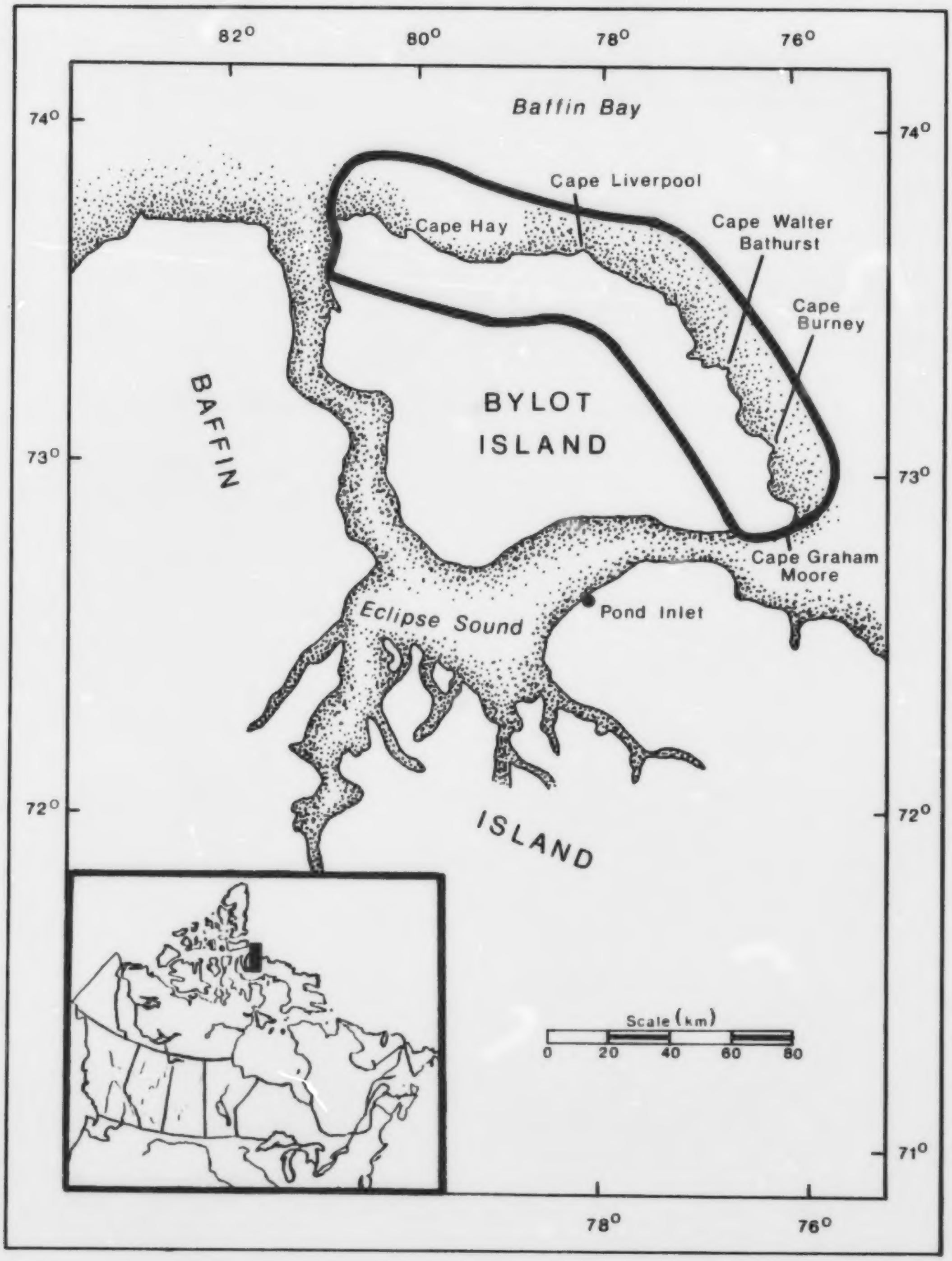

82°
80°
78°
76°
74°
73°
72°
71°
Baffin Bay
Cape Liverpool
Cape Hay
Cape Walter Bathurst
Cape Burney
BYLOT ISLAND
BAFFIN
ISLAND
Cape Graham Moore
Pond Inlet
Eclipse Sound
Scale (km)
0
20
40
60
80

Figure 37. BYLOT ISLAND

Name: BYLOT ISLAND

Reference Number: 35

Schedule: 2

Location: The approximate geographic centre of the Bylot Island area is located at 73°30'N, 77°40'W, 100 km north of the settlement of Pond Inlet in the District of Franklin.

Size: 8,000 km2

Boundary: The boundary is based on polar bear distribution and abundance data from aerial surveys and mark-recapture studies conducted between 1970 and 1979 (Schweinsburg et al. 1977,1980,1982; Stirling et al. 1979). It extends offshore for approximately 20 km to include the landfast ice along Bylot Island, and the floe edge habitat between the landfast ice and the polynya that generally opens in winter along the eastern coast of Bylot Island (Smith and Rigby 1981). Landfast ice and floe edge habitats are important feeding areas for polar bears and tend to concentrate bears in these habitats in winter (Urquhart and Schweinsburg 1984).

Natural Setting: The Bylot Island area lies within the Davis Highlands physiographic region, a rugged, mountainous area of deeply dissected crystalline rocks (Bostock 1970). Higher elevations exceed 2,000 m asl and are characterized by permanent ice fields and glaciers, many of which reach sea level. Coastal areas of Bylot Island are variable, ranging from broad, undulating plains at Cape Liverpool to rugged, mountainous areas of metamorphic bedrock at Cape Walter Bathurst and Cape Burney (Canada Department of the Environment 1981e). Vegetation consists of nearly continuous sedge-willow or sedge-moss cover on coastal plains and valleys; upland sites support a discontinuous cover of avens, herbs and lichens with extensive barren ground. The waters around Bylot Island are usually frozen by the end of October, but an open lead usually develops between the landfast ice and the moving pack ice in Baffin Bay (Smith and Rigby 1981). Ice begins to disappear during the second week of June and is usually gone from the area by the last week of July (Canada Department of the Environment 1981e).

Importance to Wildlife: The northern and eastern coastal areas of Bylot Island are used by polar bears for three main purposes: maternity denning, feeding, and as a "summer retreat". Although few maternity dens have actually been located on Bylot Island, the number of family groups observed prior to mid-April along the north and east coasts suggests that these areas are important for denning (Schweinsburg et al. 1980). Denning generally begins in October or November; by mid-April most females with cubs of the year leave their dens and travel to areas of landfast ice to feed on ringed seals (Stirling et al. 1980). In late winter (April and May), the landfast ice is also important feeding habitat for males and females without cubs (Schweinsburg et al. 1982). Following break-up of the landfast ice, the shoreline and coastal mountain areas of Bylot Island are used as a "summer retreat" by polar bears until freeze-up in late October. Bears that frequent Bylot Island are considered to be part of the population that ranges from the waters of Baffin Bay across to Barrow Strait and north to northern Ellesmere Island (Urquhart and Schweinsburg 1984). In 1979, this population was estimated at approximately 1,650 animals (Schweinsburg et al. 1980).

The delineated area overlaps with two key habitat sites for migratory birds: a colony of approximately 140,000 pairs of thick-billed murres and 20,000 pairs of black-legged kittiwakes is located west of Cape Hay, and a colony of approximately 20,000 pairs of murres and 3,000 pairs of kittiwakes is located north of Cape Graham Moore (McCormick et al. 1984).

Other Conservation Interests: Bylot Island was established as a Migratory Bird Sanctuary in 1965, pursuant to the Migratory Birds Convention Act, and parts of the island and offshore were proposed as an IBP site (Nettleship and Smith 1975). Bylot and north Baffin islands are also considered as a priority area for establishment of a national park (Canada Department of the Environment 1984d, Scotter 1985).

Protective Status: Land-use activities are regulated under the Migratory Bird Sanctuary Regulations of the Migratory Birds Convention Act, and the Territorial Land Use Regulations of the Territorial Lands Act.

WOOD BISON

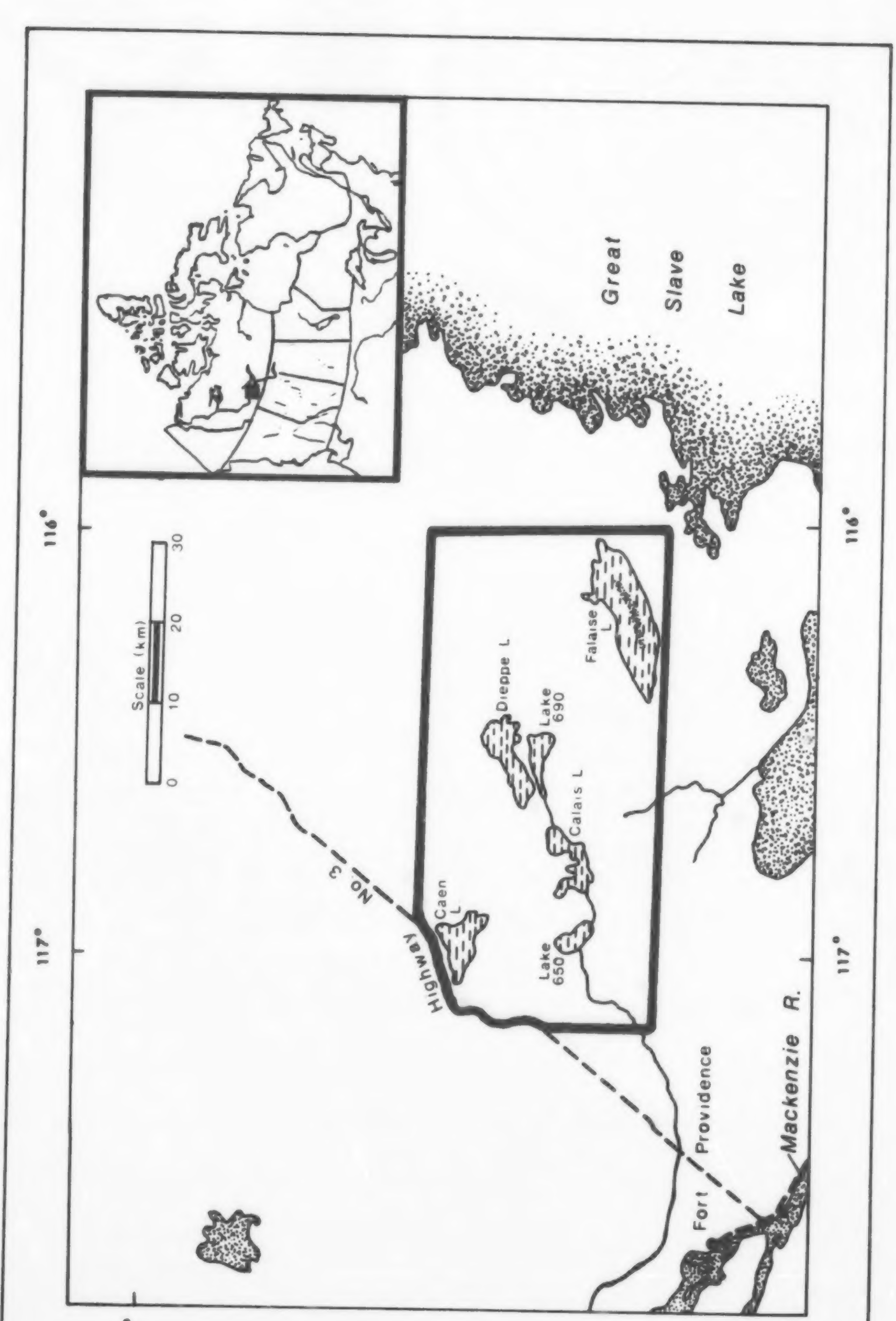

62°
117°
116°
Scale (km)
0
10
20
30
Highway
No 3
Caen L
Lake 650
Calais L
Lake 690
Dieppe L
Falaise L
Fort Providence
Mackenzie R.
Great Slave Lake

Figure 38. FALAISE LAKE

Name: FALAISE LAKE

Reference Number: 36

Schedule: 1

Location: The approximate geographic centre of the Falaise Lake area is located at 61°33'N, 116°35'W, 61 km northeast of the settlement of Fort Providence in the District of Mackenzie.

Size: 1,900 km2

Boundary: The delineated area encompasses the prime feeding habitats of the Mackenzie Wood Bison Herd. They include Falaise, Dieppe, Calais and Caen lakes, Lakes "690" and "650", and the many small sedge meadows between Falaise and Caen lakes. Fourteen aerial surveys between 1968 and 1984 have demonstrated the importance of the lacustrine depressions and associated sedge meadows as bison habitat.

Natural Setting: The Falaise Lake area lies within the Great Slave Plain physiographic region (Bostock 1970) and is characterized by low-lying, level to gently-sloping ground (Day 1968). Raised sandy beaches, strandlines and ice-push ridges provide local topographic relief. The region is underlain by Upper Devonian bedrock, chiefly shale, calcareous sandstone and siltstone. Surficial materials vary from fine-textured lacustrine sediments, deposited by glacial Lake McConnell, to stony and gravelly glacial till.

Vegetation in the Falaise Lake area is representative of the Upper Mackenzie Section of the Boreal Forest Region (Rowe 1972). The dominant species in low-lying muskeg areas are black spruce and tamarack, while mixed stands of white spruce, balsam poplar and white birch occur on well-drained sites. Jack pine and trembling aspen are widely distributed on sandy soils.

Numerous lacustrine depressions devoid of forest cover are scattered throughout the region. The largest of these - Falaise (75 km^2), Dieppe (21 km^2), Calais (18 km^2), and Caen (26 km^2) lakes - comprise approximately 7 per cent of the area. Each of these "lakes" contains open water only in the deepest part of the basin; the remaining area supports a mixture of grass (predominantly reed grasses) and sedge communities, and willow shrublands. The water table is generally near the surface and patches of bare, saturated soil are also a characteristic feature of these lacustrine depressions.

Importance to Wildlife: The largest population of wood bison in the NWT occurs within the delineated area. Since the re-introduction of 18 wood bison in 1963, the Mackenzie Wood Bison Herd population has been censused on a regular basis and its rate of growth and range use patterns are well documented (NWT Department of Renewable Resources 1983). A 1984 census produced a count of 1,206 bison (C. Gates pers. comm.). Falaise, Dieppe and Calais lakes have consistently supported large numbers of bison, during both winter and summer surveys. In 13 of 14 population surveys, at least half of all observed bison were counted on these lake beds. Other important feeding habitats include the sedge/grass communities associated with Caen Lake, the large lake basins south of Dieppe Lake (Lake "690") and west of Calais Lake (Lake "650"), and the numerous small depressions between Falaise and Caen lakes. Slough sedge and reed grasses, the most important forage plants in the diet of bison during all seasons (Reynolds et al. 1978), are well represented in the plant communities associated with these wetland habitats (Mychasiw In prep.).

Other Conservation Interests: The delineated area overlaps a proposed IBP site (Nettleship and Smith 1975).

Protective Status: Land-use activities are regulated under the Territorial Lands Act and Territorial Land Use Regulations. The delineated area lies within the Mackenzie Bison Sanctuary, as described under the Wildlife Act, but this designation does not confer protective status to sanctuary lands.

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APPENDICES

APPENDIX "A"

Memorandum of Understanding on a Cooperative Planning and Public Consultation Process for Wildlife Conservation Areas

This agreement made this 7th day of August 1985.

BETWEEN:

The Government of Canada (hereinafter referred to as "Canada") represented by the Minister of the Environment.

AND:

The Government of the Northwest Territories (hereinafter referred to as "GNWT") represented by the Minister of Renewable Resources.

PREAMBLE:

WHEREAS Canada and GNWT wish to support each other's objectives for the conservation of wildlife in the Northwest Territories;

AND WHEREAS the implementation of northern wildlife conservation initiatives will be consistent with the Northern Conservation Strategy and with land use policies and guidelines developed under the federal/territorial land use planning program, and with the DOE/DIAND Memorandum of Understanding respecting National Wildlife Areas;

AND WHEREAS Canada is responsible for the protection and conservation of wildlife under the Migratory Birds Convention Act and the Canada Wildlife Act;

AND WHEREAS GNWT is responsible for the protection and conservation of wildlife under the Northwest Territories Act and the Wildlife Act;

NOW THEREFORE the Parties agree as follows:

Firstly, the Parties understand that the Ministers' obligations to exercise their statutory discretion shall remain unfettered and that this exercise requires that the Ministers may or may not follow the procedure described in the following articles;

Secondly, the Ministers agree, in respect of their statutory and administrative duties, to use their best endeavours to achieve the objectives of this Memorandum of Understanding;

Thirdly, the activities pertaining to identifying, establishing and managing Wildlife Conservation Areas (hereinafter referred to as "Areas") will be undertaken cooperatively, and that a federal-territorial Area Management Agreement detailing the management authority and terms and conditions for management will be developed for each Area.

DEFINITIONS:

In this Agreement:

"Wildlife Conservation Area" is an area formally established under one or more of the above Acts, subsequent to this Agreement, to maintain habitats which are essential to the welfare of one or more wildlife or migratory bird populations, in the Northwest Territories.

"Designation" shall mean the establishment of a wildlife conservation area pursuant to the Canada Wildlife Act, the Migratory Birds Convention Act or the (Territorial) Wildlife Act.

"Area Management Agreement" is an agreement between the Canadian Wildlife Service and the Department of Renewable Resources on behalf of their respective Ministers which specifies the roles and responsibilities of the Department of the Environment and the Department of Renewable Resources in managing an area.

"Public Consultation" is the process of soliciting input from sources outside government on plans for designating and managing Areas, in accordance with the policies of the Department of Renewable Resources and the Department of the Environment.

PURPOSE:

The purpose of this Agreement is to ensure the maintenance and enhancement of wildlife and migratory bird populations by protecting their important habitats; and to provide a mechanism for cooperation between departments and consultation with the public leading to the coordinated management of wildlife and migratory birds and their habitats.

INTERDEPARTMENTAL COOPERATION:

Priority Setting:

(1) The Department of Renewable Resources and the Department of the Environment (hereinafter referred to as "the Departments") will identify important areas of habitat pursuant to their legislated wildlife management responsibilities.

(2) The Departments will cooperatively review the importance of individual habitat areas in order to determine priority sites for designation.

(3) The Minister of Renewable Resources and the Minister of the

Environment shall advise the Minister of Indian Affairs and Northern Development of these priorities and shall seek his/her support in proceeding towards designation.

Preparations for Designation:

(4) The Minister of Renewable Resources and the Minister of Environment will on mutual agreement select candidate Areas for proposed designation.

(5) The Departments will jointly prepare a justification for each Area that is proposed for designation. The justification shall identify the proposed legislative basis for designation and shall specify which department shall assume lead responsibility for developing an Area Management Agreement.

(6) The Departments will present the justification for each Area for consideration by their respective Ministers. The Minister of the Environment and the Minister of Renewable Resources will by common agreement determine whether to pursue the designation of each new Area.

Area Management Agreements:

(7) An Area Management Agreement shall be developed by the Departments for each designated area in order to specify respective roles and responsibilities, and to provide the basis for developing an Area Management Plan.

(8) The Area Management Plan shall specify the goals and objectives and the management, administration, financial and other arrangements for managing an Area.

Public Consultation and Information:

(9) Canada and GNWT agree that there shall be public consultation with respect to proposed Areas. GNWT shall have primary responsibility for public consultation on all Areas within the Northwest Territories. Canada will participate in these public consultations as appropriate. Costs of public consultation will be allocated by mutual consent.

(10) Public Consultation will involve the community(ies) in the Northwest Territories potentially affected by the proposed Area(s). Other groups, including federal and territorial agencies and industry, having an interest in the Area(s) will be invited to participate in the consultation process.

(11) The Departments agree to cooperate in the development and implementation of programs for public information respecting the designation and management of Areas established under this Agreement. Any public announcement regarding common activities

under this Agreement, as well as any official opening ceremony for any projects under this Agreement, where such a ceremony is indicated and appropriate, shall be arranged cooperatively.

GENERAL:

The Departments shall prepare annual plans covering activities covered by this Agreement.

This Agreement shall be administered by the Regional Director of the Canadian Wildlife Service, Department of the Environment and the Director of Wildlife Management for the Department of Renewable Resources.

This Agreement may be amended or terminated in writing as agreed to from time-to-time by the Minister of the Environment and the Minister of Renewable Resources.

SIGNATORIES:

IN WITNESS WHEREOF this Agreement has been executed on behalf of Canada by the Minister of the Department of the Environment and on behalf of the Northwest Territories by the Minister of Renewable Resources.

IN THE PRESENCE OF:

Original Signed by:) Suzanne Blais-Grenier)) _________________________)	Original Signed by:) Nellie Cournoyea)) _________________________)
MINISTER DEPARTMENT OF THE ENVIRONMENT GOVERNMENT OF CANADA	MINISTER DEPARTMENT OF RENEWABLE RESOURCES GOVERNMENT OF THE NORTHWEST TERRITORIES

APPENDIX "B"

Schedule "A" of the *Wildlife Act* (S.N.W.T. 1978)

ITEM 1. BIG GAME

(1) *Bison* - including buffalo and bison
(2) *Canis* - including coyotes and wolves
(3) *Felis* - including mountain lions
(4) *Gulo* - including wolverine
(5) *Oreamnos* - including mountain goats
(6) *Ovis* - including mountain sheep
(7) *Ovibos* - including muskox
(8) *Ursus* - including bears
(9) Cervidae except *Rangifer tarandus tarandus* within the Mackenzie Reindeer Grazing Reserve - including caribou, moose and deer except reindeer in that preserve.

ITEM 2. BIRDS OF PREY

(1) Falconiformes - including eagles, falcons, hawks, harriers and ospreys
(2) Strigiformes - including owls

ITEM 3. FUR-BEARING ANIMALS

(1) *Castor* - including beaver
(2) *Alopex* - including white fox and arctic fox
(3) *Lutra* - including otter
(4) *Lynx* - including lynx
(5) *Martes* - including martens and fishers
(6) *Mephitis* - including skunk
(7) *Mustela* - including ermine, weasels, least weasels and mink
(8) *Ondatra* - including muskrat
(9) *Tamiasciurus* - including red squirrels
(10) *Vulpes* - including red, cross, black and silver fox
(11) *Gulo* - including wolverine
(12) *Canis* - including wolves and coyotes

ITEM 4. SMALL GAME

(1) *Erethizon* - including porcupine
(2) *Lepus* - including hare
(3) *Marmota* - including marmots, wood chuck and ground hogs
(4) *Spermophilus* - including ground squirrels
(5) *Tamiasciurus* - including red squirrels
(6) Upland game birds

ITEM 5. UPLAND GAME BIRDS

(1) Galliformes - including grouse and ptarmigan

ITEM 6. NON-GAME BIRDS

(1) birds that are not upland game birds or migratory game birds but that in their natural habitat are found wild in nature and are naturally occurring in the Territories
(2) Corvidae - including crows, jays and ravens
(3) Icteridae - including blackbirds and orioles
(4) Pelecanidae - including pelicans
(5) Alcedinidae - including kingfishers

ITEM 7. NON-GAME ANIMALS

(1) *Eutamias* - including chipmunks
(2) *Glaucomys* - including flying squirrels
(3) *Neotoma* - including wood rat
(4) Chiroptera - including bats

APPENDIX "C"

Scientific Names of Plants and
Animals mentioned in the Text[1]

Plants

Alder	*Alnus* sp.
Arctic poppy	*Papaver* sp.
Arctic heather	*Cassiope tetragona*
Balsam poplar	*Populus balsamifera*
Bear berry	*Arctostaphylos* sp.
Black spruce	*Picea mariana*
Blueberry	*Vaccinium* sp.
Buffalo berry	*Shepherdia canadensis*
Cinquefoil	*Potentilla* sp.
Cotton-grass	*Eriophorum* sp.
Crowberry	*Empetrum* sp.
Dwarf birch	*Betula glandulosa*
Feltleaf willow	*Salix alaxensis*
Jack pine	*Pinus banksiana*
Labrador-tea	*Ledum* sp.
Mountain avens	*Dryas* sp.
Mountain cranberry	*Vaccinium vitis-idaea*
Purple saxifrage	*Saxifraga oppositifolia*
Red osier dogwood	*Cornus stolonifera*
Reed grass	*Calamagrostis* sp.
Saxifrage	*Saxifraga* sp.
Sedge	*Carex* sp.
Slough sedge	*C. atherodes*
Tamarack	*Larix laricina*
Trembling aspen	*Populus tremuloides*
White birch	*Betula papyrifera*
White spruce	*Picea glauca*
Willow	*Salix* sp.

Birds

Black guillemot	*Cepphus grylle*
Black-legged kittiwake	*Rissa tridactyla*
Brant	*Branta bernicla*
Canada goose	*B. canadensis*
Common eider	*Somateria mollissima*
Common raven	*Corvus corax*
Dovekie	*Alle alle*
Glaucous gull	*Larus hyperboreus*
Golden eagle	*Aquila chrysaetos*
Greater snow goose	*Anser caerulescens atlanticus*
Gyrfalcon	*Falco rusticolus*
Kumlien's gull	*Larus glaucoides kumlieni*

Birds - Continued

Lesser snow goose	*Anser caerulescens caerulescens*
Northern fulmar	*Fulmarus glacialis*
Peregrine falcon	*Falco peregrinus*
Rock ptarmigan	*Lagopus mutus*
Ross's goose	*Anser rossii*
Rough-legged hawk	*Buteo lagopus*
Thayer's gull	*Larus glaucoides thayeri*
Thick-billed murre	*Uria lomvia*
Tundra swan	*Cygnus columbianus*
White-fronted goose	*Anser albifrons*

Mammals

Arctic fox	*Alopex lagopus*
Arctic ground squirrel	*Spermophilus parryii*
Arctic hare	*Lepus arcticus*
Barren-ground caribou	*Rangifer tarandus groenlandicus*
Beaver	*Castor canadensis*
Black bear	*Ursus americanus*
Bowhead whale	*Balaena mysticetus*
Coyote	*Canis latrans*
Dall's sheep	*Ovis dalli*
Ermine	*Mustela erminea*
Grizzly bear	*Ursus arctos*
Harp seal	*Phoca groenlandica*
Lynx	*Lynx lynx*
Marten	*Martes americana*
Moose	*Alces alces*
Muskox	*Ovibos moschatus*
Peary caribou	*Rangifer tarandus pearyi*
Polar bear	*Ursus maritimus*
Red fox	*Vulpes vulpes*
Reindeer	*Rangifer tarandus tarandus*
Ringed seal	*Phoca hispida*
Walrus	*Odobenus rosmarus*
Wolf	*Canis lupus*
Wolverine	*Gulo gulo*
Wood bison	*Bison bison athabascae*
Woodland caribou	*Rangifer tarandus caribou*

[1] Authorities for the scientific nomenclature of plants, birds and mammals are Porsild and Cody (1980), Godfrey (1986) and Banfield (1974), respectively.

APPENDIX "D"

Map of the Northwest Territories Depicting the
Locations of Wildlife Areas of Special Interest
to the Department of Renewable Resources

(In Pocket)

WILDLIFE

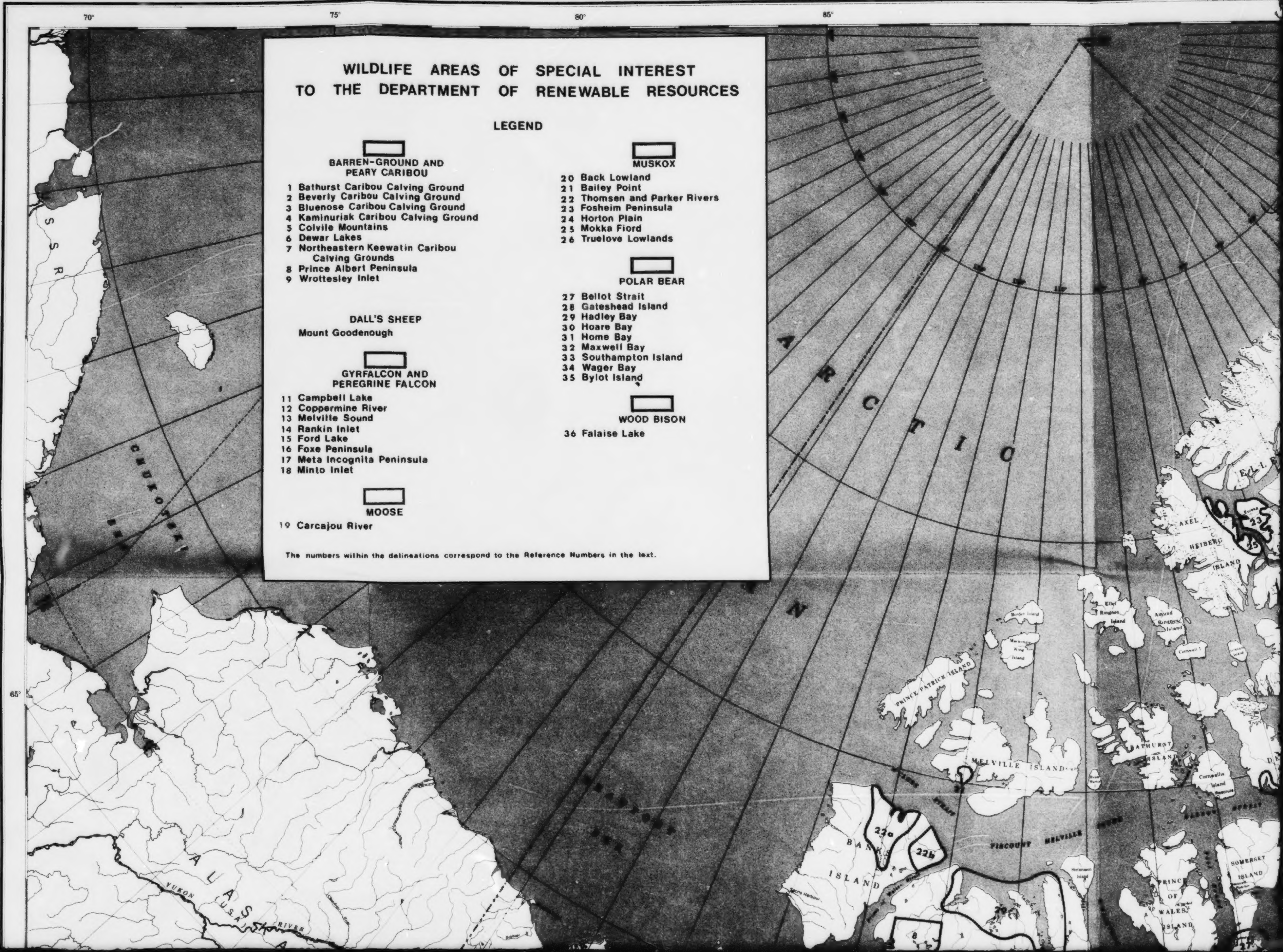
19 Gaining Momentum / Un nouvel essor 87

FAUNE

Tı̨ch'ádéé

19 K'egodini régoee agodedee 87

The year 1987 marks the 100th anniversary of Canada's first wildlife conservation area. On 8 June 1887, Prime Minister Sir John A. MacDonald established the Last Mountain Lake Bird Sanctuary, north of Regina, Saskatchewan. Conservation groups across Canada are celebrating the first 100 years of achievement and expressing their dedication to the next century of wildlife conservation under the banner, "Gaining Momentum".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ALASKA
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BEAUFORT SEA
BANKS ISLAND
PRINCE PATRICK ISLAND
MELVILLE ISLAND
Borden Island
Mackenzie King Island
Ellef Ringnes Island
Amund Ringnes Island
Cornwall I.
AXEL HEIBERG ISLAND
BATHURST ISLAND
Cornwallis Island
SOMERSET ISLAND
PRINCE OF WALES ISLAND
VISCOUNT MELVILLE SOUND
BARROW STRAIT
22a
22b
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27

WILDLIFE AREAS OF SPECIAL INTEREST TO THE DEPARTMENT OF RENEWABLE RESOURCES

LEGEND

▭

BARREN-GROUND AND PEARY CARIBOU

1 Bathurst Caribou Calving Ground
2 Beverly Caribou Calving Ground
3 Bluenose Caribou Calving Ground
4 Kaminuriak Caribou Calving Ground
5 Colvile Mountains
6 Dewar Lakes
7 Northeastern Keewatin Caribou Calving Grounds
8 Prince Albert Peninsula
9 Wrottesley Inlet

DALL'S SHEEP

Mount Goodenough

▭

GYRFALCON AND PEREGRINE FALCON

11 Campbell Lake
12 Coppermine River
13 Melville Sound
14 Rankin Inlet
15 Ford Lake
16 Foxe Peninsula
17 Meta Incognita Peninsula
18 Minto Inlet

▭

MOOSE

19 Carcajou River

▭

MUSKOX

20 Back Lowland
21 Bailey Point
22 Thomsen and Parker Rivers
23 Fosheim Peninsula
24 Horton Plain
25 Mokka Fiord
26 Truelove Lowlands

▭

POLAR BEAR

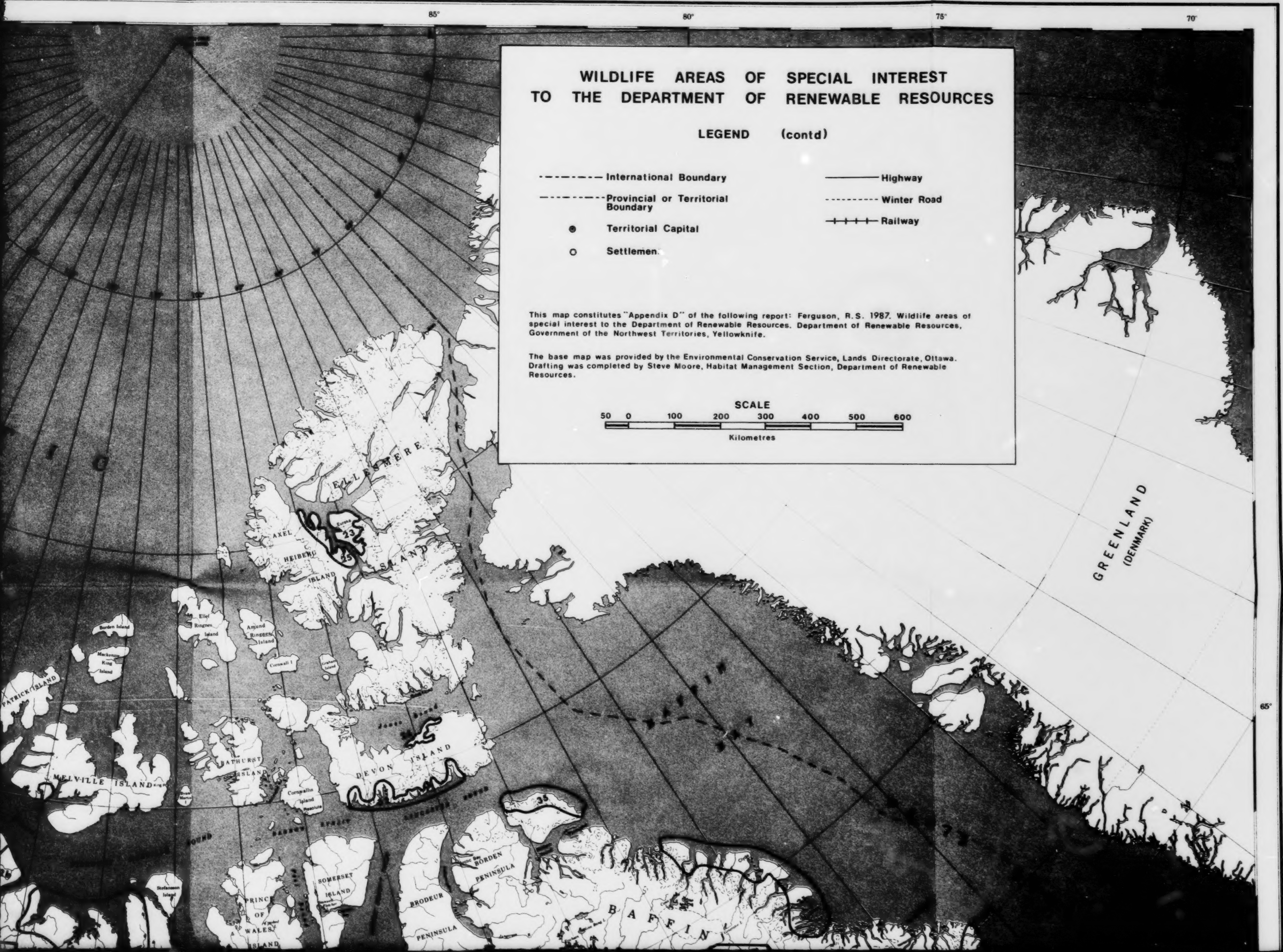
27 Bellot Strait
28 Gateshead Island
29 Hadley Bay
30 Hoare Bay
31 Home Bay
32 Maxwell Bay
33 Southampton Island
34 Wager Bay
35 Bylot Island

▭

WOOD BISON

36 Falaise Lake

The numbers within the delineations correspond to the Reference Numbers in the text.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Amund Ringnes Island
Cornwall I.
Graham Island
PATRICK ISLAND
MELVILLE ISLAND
BATHURST ISLAND
Cornwallis Island
Resolute
DEVON ISLAND
Jones Sound
Lancaster Sound
Barrow Strait
Sound
Stefansson Island
PRINCE OF WALES ISLAND
SOMERSET ISLAND
BRODEUR PENINSULA
BORDEN PENINSULA
BAFFIN
35
23
GREENLAND
(DENMARK)

WILDLIFE AREAS OF SPECIAL INTEREST TO THE DEPARTMENT OF RENEWABLE RESOURCES

LEGEND (contd)

- -·-·-·- International Boundary
- -·-·-·- Provincial or Territorial Boundary
- ● Territorial Capital
- ○ Settlement
- ——— Highway
- - - - - - Winter Road
- +-+-+-+ Railway

This map constitutes "Appendix D" of the following report: Ferguson, R.S. 1987. Wildlife areas of special interest to the Department of Renewable Resources. Department of Renewable Resources, Government of the Northwest Territories, Yellowknife.

The base map was provided by the Environmental Conservation Service, Lands Directorate, Ottawa. Drafting was completed by Steve Moore, Habitat Management Section, Department of Renewable Resources.

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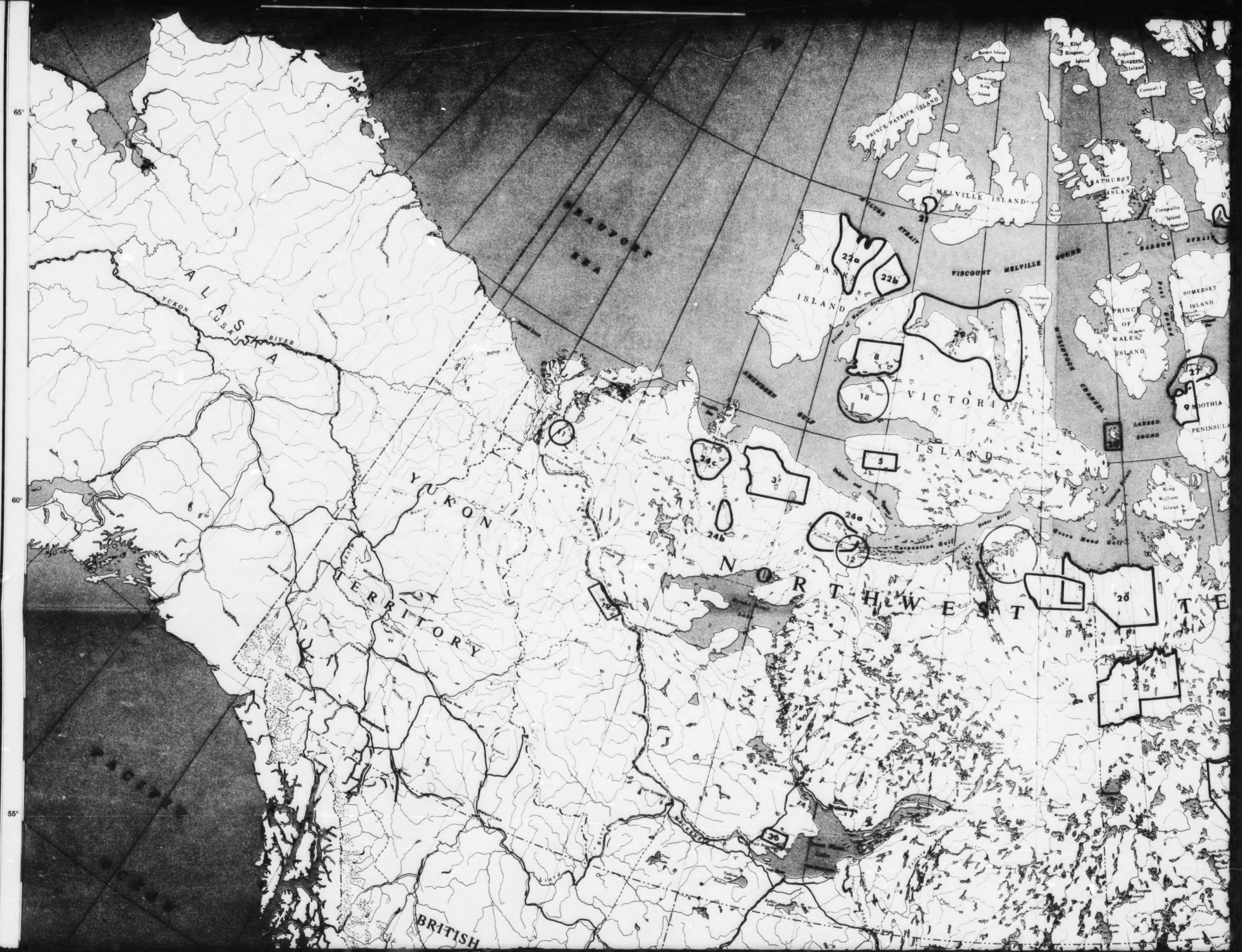
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YUKON (U.S.A.) RIVER
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Cornwallis Island
Resolute
BARROW STRAIT
M'CLURE STRAIT
BANKS ISLAND
VISCOUNT MELVILLE SOUND
AMUNDSEN GULF
VICTORIA ISLAND
M'CLINTOCK CHANNEL
PRINCE OF WALES ISLAND
SOMERSET ISLAND
BOOTHIA PENINSULA
LARSEN SOUND
King William Island
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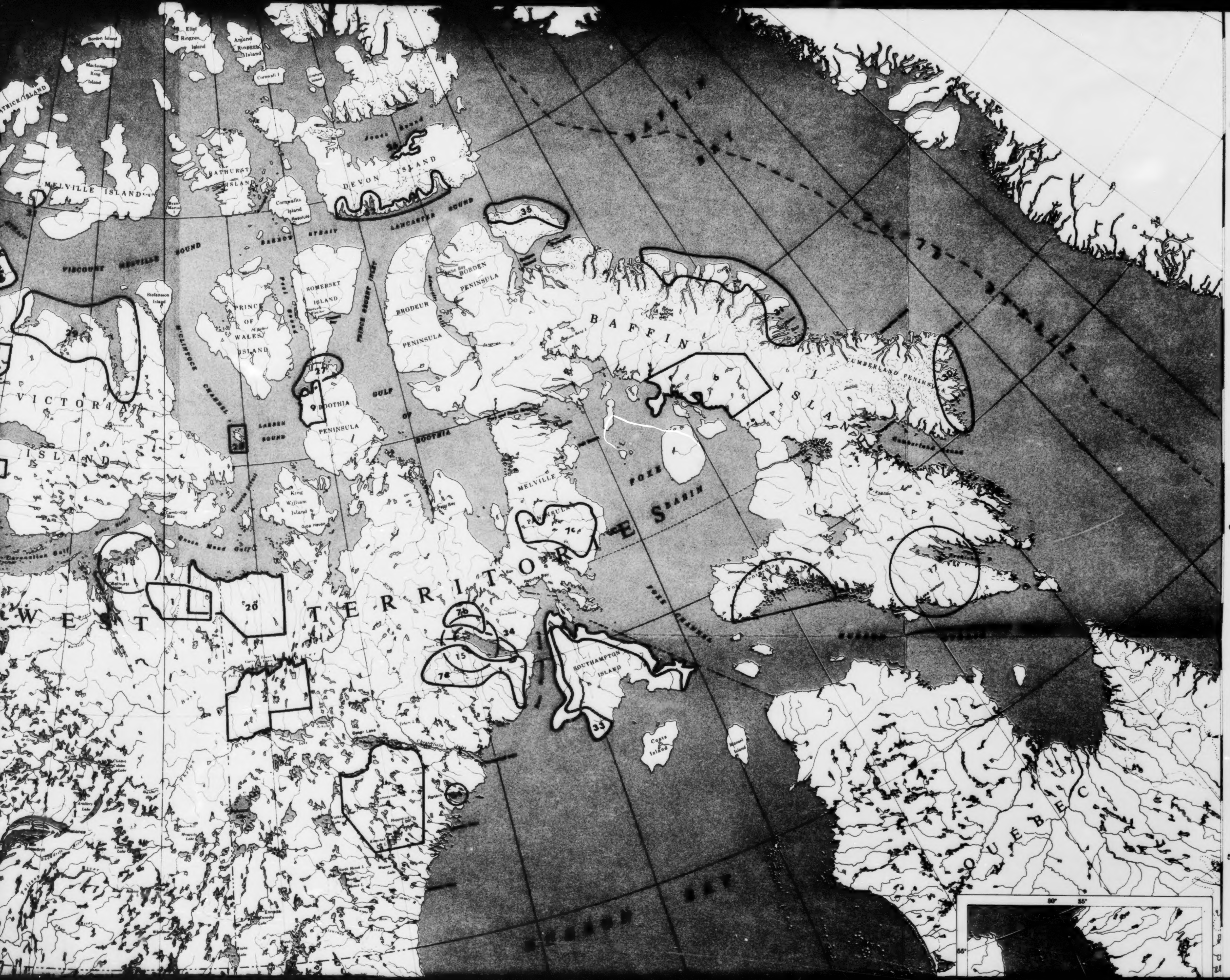
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VISCOUNT MELVILLE SOUND
Stefansson Island
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M'CLINTOCK CHANNEL
Peel Sound
PRINCE REGENT INLET
BRODEUR PENINSULA
BORDEN PENINSULA
BAFFIN ISLAND
CUMBERLAND PENINSULA
Cumberland Sound
BAFFIN BAY
DAVIS STRAIT
VICTORIA ISLAND
LARSEN SOUND
BOOTHIA PENINSULA
GULF OF BOOTHIA
King William Island
Gjoa Haven
Cambridge Bay
Coronation Gulf
Queen Maud Gulf
Bathurst Inlet
MELVILLE PENINSULA
FOXE BASIN
FOXE CHANNEL
Repulse Bay
SOUTHAMPTON ISLAND
Coats Island
Mansel Island
Baker Lake
Chesterfield Inlet
Rankin Inlet
HUDSON BAY
HUDSON STRAIT
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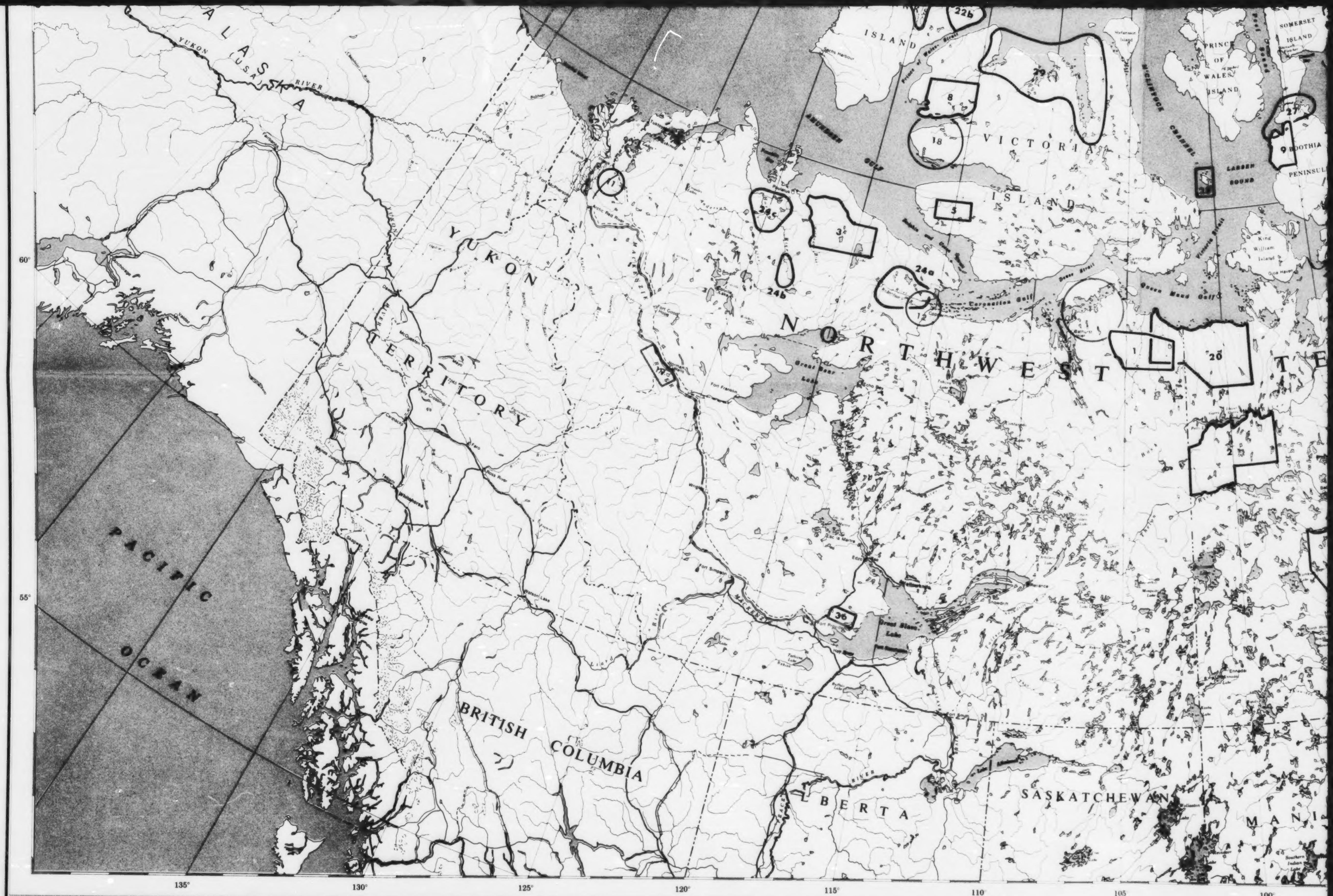
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VICTORIA ISLAND
PRINCE OF WALES ISLAND
SOMERSET ISLAND
BOOTHIA PENINSULA
King William Island
Great Bear Lake
Great Slave Lake
Coronation Gulf
Queen Maud Gulf
Amundsen Gulf
M'Clintock Channel
Larsen Sound
Fort Franklin
Fort Simpson
Southern Indian Lake
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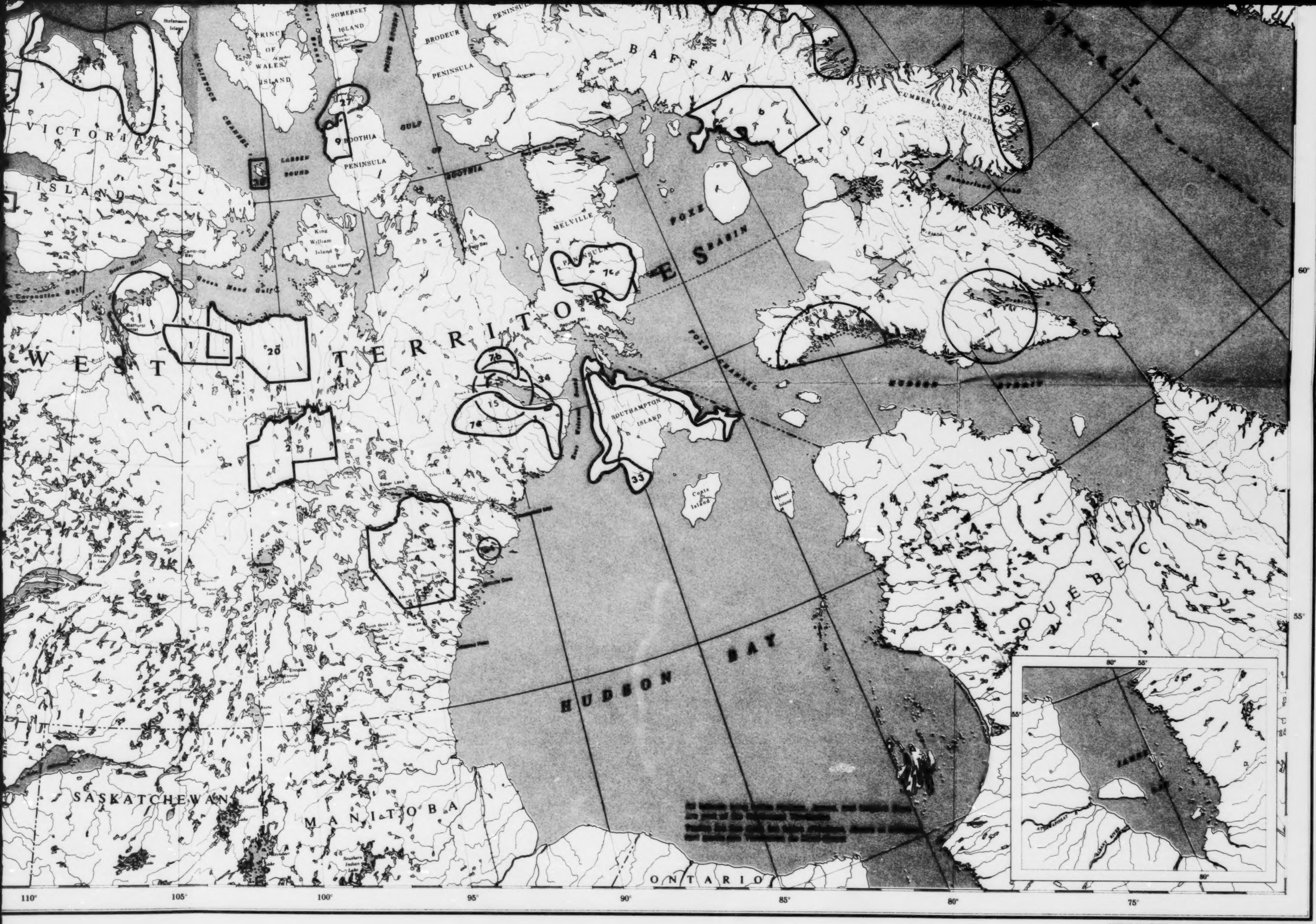
BASE MAP PRODUCED BY SURVEYS AND MAPPING BRANCH
DEPARTMENT OF ENERGY, MINES AND RESOURCES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Cumberland Sound
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Coats Island
Mansel Island
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JAMES BAY
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ONTARIO
MANITOBA
SASKATCHEWAN
Baker Lake
Chesterfield Inlet
Rankin Inlet
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CARTE DE BASE ÉTABLIE PAR LA DIRECTION DES LEVÉS ET DE LA CARTOGRAPHIE, MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES